

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended

December 31, 2022

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report

For the transition period from _____ to _____

Commission file number: 001-37877

The Bank of N.T. Butterfield & Son Limited

(Exact name of Registrant as specified in its charter)

Bermuda

(Jurisdiction of incorporation or organization)

65 Front Street, Hamilton, HM 12 Bermuda

(Address of principal executive offices)

Shaun Morris, 65 Front Street, Hamilton, HM 12 Bermuda

Telephone: (441) 295-1111; Fax: (441) 292-4365

E-mail: Shaun.Morris@Butterfieldgroup.com

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

<u>Title of each class</u>	<u>Trading Symbol (s)</u>	<u>Name of each exchange on which registered</u>
Voting ordinary shares of par value BMS 0.01 each	NTB	New York Stock Exchange
Voting ordinary shares of par value BMS 0.01 each	NTB.BH	Bermuda Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Act: **None**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **None**

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

As at December 31, 2022, there were 50,277,466 shares of the registrant's common stock outstanding.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes No

Note – Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.:

Large accelerated filer Accelerated filer Non-accelerated filer Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act.

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP

International Financial Reporting Standards as issued by the International Accounting Standards Board

Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

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EXPLANATORY NOTE

In this report, unless the context indicates otherwise, the term:

- **"Bank"** or **"Butterfield"** refers to:
 - The Bank of N.T. Butterfield & Son Limited;
- **"BMA"** refers to:
 - The Bermuda Monetary Authority;
- **"Board"** refers to:
 - The Board of Directors of the Bank;
- **"common shares"** refers to:
 - the voting ordinary shares of par value BM\$ 0.01 each in the Bank; and
- **"we", "our", "us", "the Company"** and **"the Group"** refer to:
 - the Bank and its consolidated subsidiaries.

Refer also to the Glossary at the end of this document for additional terms.

PRESENTATION OF FINANCIAL AND OTHER INFORMATION

In this report, references to **"BMD"**, **"BM\$"**, or **"Bermuda Dollars"** are to the lawful currency of Bermuda, and **"USD"**, **"US\$"**, **"\$"** and **"US Dollars"** are to the lawful currency of the United States of America. The Bermuda Dollar is pegged to the US Dollar on a one-to-one basis and therefore, for all periods presented, BM\$1.00 = US\$1.00.

Certain monetary amounts, percentages and other figures included in this report have been subject to rounding adjustments. Accordingly, figures shown as totals in certain tables may not be the arithmetic aggregation of the figures that precede them, and figures expressed as percentages in the text may not total 100% or, as applicable, when aggregated may not be the arithmetic aggregation of the percentages that precede them.

Our consolidated financial statements as at December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020 have been audited, as stated in the report appearing herein, by PricewaterhouseCoopers Ltd., Bermuda ("PwC"), and are included in this report and are referred to as our audited consolidated financial statements. We have prepared these financial statements in accordance with GAAP.

We believe that the non-GAAP measures included in this report provide valuable information to readers because they enable the reader to identify the financial measures we use to track the performance of our business and guide management. Furthermore, these measures provide readers with valuable information regarding our core activities, which allows for a more meaningful evaluation of relevant trends when considered in conjunction with measures calculated in accordance with GAAP. Non-GAAP measures used in this report are not a substitute for GAAP measures and readers should consider the GAAP measures as well. For more information on non-GAAP measures, including a reconciliation to the most directly comparable GAAP financial measures, see Item 5.A. "Operating Results — Reconciliation of Non-GAAP Financial Measures".

INDUSTRY AND MARKET DATA

Some of the discussion contained in this report relies on certain market and industry data obtained from third-party sources that we believe to be reliable. Market estimates are calculated by using independent industry publications and third-party forecasts in conjunction with our assumptions about our markets. While we believe the industry and market data to be reliable as of the date of this report, this information is subject to change based on various factors, including those discussed under the headings "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors" in this report.

TRADEMARKS AND SERVICE MARKS

We own or have rights to trademarks and service marks for use in connection with the operation of our business. All other trademarks or service marks appearing in this report that are not identified as marks owned by us are the property of their respective owners. Solely for convenience, the trademarks, service marks and trade names referred to in this report are listed without the ®, (TM) and (sm) symbols, but we will assert, to the fullest extent under applicable law, our applicable rights in these trademarks, service marks and trade names.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report contains forward-looking statements. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on our current beliefs, expectations or assumptions regarding the future of our business, future plans and strategies, our operational results and other future conditions. Forward-looking statements can be identified by words such as "anticipate," "assume," "believe," "estimate," "expect," "indicate," "intend," "may," "plan," "point to," "predict," "project," "seek," "target," "potential," "will," "would," "could," "should," "continue," "contemplate" and other similar expressions, although not all forward-looking statements contain these identifying words. These forward-looking statements include all matters that are not historical facts. They appear in a number of places throughout this annual report and include statements regarding our intentions, beliefs or current expectation concerning, among other things, our results of operations, financial condition, capital and liquidity requirements, prospects, growth, strategies, share repurchases and the industry in which we operate.

There are important factors that could cause actual results to differ materially from those contemplated by such forward-looking statements. By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. We believe that these risks and uncertainties include, but are not limited to, those described in the section captioned "Risk Factors" that appear in Item 3.D. "Risk Factors" of this annual report. These factors should not be construed as exhaustive and should be read with the other cautionary statements in this annual report.

Although we base these forward-looking statements on assumptions that we believe are reasonable when made, we caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from those made in or suggested by the forward-looking statements contained in this report. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate, are consistent with the forward-looking statements contained in this report, those results or developments may not be indicative of results or developments in subsequent periods.

Given these risks and uncertainties, you are cautioned not to place undue reliance on these forward-looking statements. Any forward-looking statement that we make in this report speaks only as of the date of such statement. Except to the extent required by applicable law, we undertake no obligation to update any forward-looking statements or to publicly announce the results of any revisions to any of those statements to reflect future events or developments. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless specifically expressed as such, and should only be viewed as historical data.

IMPLICATIONS OF BEING A FOREIGN PRIVATE ISSUER

We are an FPI, and so long as we qualify as an FPI under the Exchange Act, we will be exempt from certain provisions of the Exchange Act that are applicable to US domestic public companies, including:

- the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations in respect of a security registered under the Exchange Act;
- the sections of the Exchange Act requiring insiders to file public reports of their share ownership and trading activities and liability for insiders who profit from trades made in a short period of time;
- the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q containing unaudited financial and other specified information, or current reports on Form 8-K, upon the occurrence of specified significant events; and
- Regulation FD, which regulates selective disclosures of material information by issuers.

We are, however, required to file an annual report on Form 20-F within four months of the end of each fiscal year. In addition, we have published and intend to continue to publish our results on a quarterly basis through press releases, distributed pursuant to the rules and regulations of the New York Stock Exchange. Press releases related to financial results and material events have been and will continue to be furnished to the SEC on Form 6-K. However, the information we are required to file with or furnish to the SEC is less extensive and less timely compared to that required to be filed with the SEC by US domestic issuers. As a result, you may not be afforded the same protections or information that would be made available to you were you investing in a US domestic issuer.

ENFORCEMENT OF CIVIL LIABILITIES

The Bank is incorporated under the laws of Bermuda. As a result, the rights of holders of the Bank's common shares will be governed by Bermuda law, the Butterfield Act and the Bank's bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions. Some of our directors and some of the named experts referred to in this annual report are not residents of the United States, and a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process on those persons in the United States or to enforce in the United States judgments obtained in US courts against us or those persons based on the civil liability provisions of the US federal securities laws. However, we may be served with process in the United States with respect to actions against us arising out of or in connection with violations of US federal securities laws relating to offers and sales of common shares made hereby by serving C T Corporation System, 28 Liberty Street, New York, NY 10005, our US agent irrevocably appointed for that purpose.

It is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the United States, against us or our directors or officers under the securities laws of those jurisdictions, or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

PART 1

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable

ITEM 3. KEY INFORMATION

A. [Reserved]

B. Capitalization and Indebtedness

Not applicable

C. Reasons for the Offer and Use of Proceeds

Not applicable

D. Risk Factors

The material risks and uncertainties that management believes affect us are described below. Any of the following risks, as well as risks that we do not know of or currently deem immaterial, could have a material adverse effect on our business, financial condition or results of operations. Further, the risk factors below include cautionary statements identifying important factors that could cause actual results to differ materially from those expressed in any forward-looking statements made by us or on our behalf. See "Cautionary Note Regarding Forward-Looking Statements."

Risks Relating to the Markets in Which We Operate

Adverse economic and market conditions in Bermuda, the Cayman Islands, the Channel Islands and the UK, and other markets in which we operate, have in the past resulted in and could in the future result in lower revenue, lower asset quality, increased provisions and lower earnings.

Our financial performance generally, and in particular the ability of our borrowers to pay interest and repay principal on outstanding loans and the value of the collateral securing those loans, as well as demand for loans and other products and services we offer and whose success we rely on to drive our future growth, are highly dependent upon the business environment in the markets in which we operate. A downturn in Bermuda, the Cayman Islands, and the Channel Islands and the UK can have a profound impact on our business performance. Some elements of the business environment that affect our financial performance include short-term and long-term interest rates, any downgrade in sovereign credit ratings to which our credit ratings are correlated, the prevailing yield curve, inflation and price levels, monetary and fiscal policy, regulatory or legal changes (including changes in tax laws) or changes in enforcement thereof, unemployment rates, investor or business confidence, natural or man-made disasters, the strength of the local economy in the markets in which we operate, or a combination of these or other factors.

Unfavorable market conditions can result in a deterioration in the credit quality of our borrowers and the demand for our products and services, an increase in the number of loan delinquencies, defaults and charge-offs, additional provisions for loan losses, decreases in asset values, deterioration in investment performance and an overall material adverse effect on the quality of our loan portfolio.

Unlike banks that are more geographically diversified, our business is concentrated primarily in Bermuda, the Cayman Islands, and the Channel Islands and the UK, and we may be more affected by a downturn in these markets than more diversified competitors.

Our banking operations are concentrated in Bermuda, the Cayman Islands, and the Channel Islands and the UK, and we serve customers in these markets. In the year ended December 31, 2022, 44%, 32% and 19%, of our total net revenue was derived from our Bermuda, Cayman Islands, and Channel Islands and UK segments, respectively. In addition, in the year ended December 31, 2022, 37%, 24% and 39%, of our loans originated in Bermuda, the Cayman Islands, and Channel Islands and the UK, respectively. Accordingly, a downturn in these markets may have a profound effect on our banking business. In addition, we have sought to expand our core business lines, including through recent acquisitions. Any failure in our ability to expand our core business lines, successfully integrate recent acquisitions or any reduction in demand for our core services in our Bermuda, Cayman Islands and Channel Islands and UK segments, including due to perceived reputational risks, increasing regulatory scrutiny over activities in these jurisdictions or otherwise, may adversely impact our business and results of operations, including the ongoing success of any of our acquired businesses.

Macroeconomic factors, including the Russia/Ukraine conflict, and other geopolitical events could disrupt our businesses and adversely affect our financial condition or results of operations.

We are exposed to risks arising out of geopolitical events, such as trade barriers, including the imposition of tariffs and other limitations on international trade and travel; exchange controls; uncertainty concerning fiscal or monetary policy, government shutdowns, debt ceilings or funding; concerns about sovereign defaults; other measures taken by sovereign governments, including by the US; and uncertainty arising from recent or upcoming elections that can hinder economic or financial activity levels. Furthermore, unfavorable political, military or diplomatic events, armed conflict, terrorist acts and threats, and pandemics, and the responses to them by governments, could also negatively affect economic activity and have an adverse effect upon our business, financial condition or results of operations.

Political and economic uncertainty or conflict has in the past led, and could in the future lead, to declines in market liquidity and activity levels, volatile market conditions and exchange rates, a contraction of available credit, exacerbation of supply chain disruptions, inflationary pressures and higher interest rates and financing issues, declines in the real estate market, weaker economic growth and investment performance and reduced business confidence, all of which could impact our business. The international response to Russia's invasion of Ukraine and the impact of the resulting direct and indirect sanctions against Russian and Belarusian individuals and entities may continue to expose us to legal and regulatory uncertainty associated with indirect exposure to Russia, Belarus or Ukraine through operations, investment and securities trading; or business relationships, connections to, or assets in Russia, Belarus or Ukraine. The US-China relationship remains complex, and there is a risk of increased restrictions and other measures being imposed by the US and other governments in relation to China. In addition, the Russia-Ukraine conflict and recent COVID-19 lockdowns in China may continue to exacerbate issues, affecting supply in certain sectors including consumer goods, metals, food, chemicals and commodities.

Changes in legislation and regulation or an attempt by any territory or dependency of the UK in which we operate to declare independence from the UK or to implement changes in its constitution, including its fiscal and monetary policies, could have a negative effect on the applicable jurisdiction's position as an international business center. This could have a significant negative effect on the local economy and in turn negatively affect our business.

Because the primary markets in which we operate do not have well-diversified economies, a downturn in their key industries could affect their economies as a whole and have an adverse effect on our business, financial condition or results of operations.

Bermuda is among the largest reinsurance markets in the world. The Cayman Islands is a leader in fund domiciliation for global asset managers, with 12,995 regulated mutual funds as at December 31, 2022 according to CIMA. International financial services account for a significant portion of the economies of the Channel Islands. Many of our commercial customers are reinsurance or regulated fund service providers. As a result, a downturn in these key sectors, a change in laws or regulations (including the favorable tax treatment of entities in these jurisdictions), or a shift of business away from Bermuda, the Cayman Islands, or the Channel Islands, including as a result of the inclusion of any of these jurisdictions on the EU list of non-cooperative jurisdictions for tax purposes or the implementation of the global minimum tax regime proposed by the Organization for Economic Cooperation and Development ("OECD") in any of these jurisdictions, could result in job losses and adversely impact the economies in these markets. Any downturn or further concentration in the reinsurance, investment and asset management and banking markets could also adversely affect our business, financial condition and results of operations.

Banks domiciled in Bermuda, including us, are not supported by a central bank from which to borrow funds, so if we are unable to maintain sufficient liquidity by continuously attracting deposits and other short-term funding, our financial condition, including our capital ratios, funding costs or results of operations could be adversely affected.

Unlike many other jurisdictions, there is no central bank or similar governmental agency in Bermuda from which we may borrow US or Bermuda Dollars if we experience liquidity shortages, which may leave us without a lender of last resort in the event that Bermuda suffers a severe economic downturn at the same time as a liquidity shortage. Similarly, there is no central bank in the Cayman Islands, Jersey or Guernsey to act as a lender of last resort. Accordingly, we may not have a lender of last resort in

case of future liquidity shortages and we may be unable to sufficiently fund our liquidity needs. While there is no central bank or similar governmental agency in Bermuda, the Cayman Islands, Jersey or Guernsey that insures bank deposits, such as the Federal Deposit Insurance Corporation in the United States, the Governments of Bermuda and the Government of the States of Jersey and Guernsey have each implemented a Deposit Insurance Scheme or Deposit Compensation Scheme. See Item 4.B. "Business Overview - Supervision and Regulation" and "- Certain jurisdictions in which we operate, including Bermuda, Guernsey and Jersey, have a Deposit Insurance Scheme or Deposit Compensation Scheme and we incur ongoing costs as a result." The regulators in these jurisdictions have also required us to hold capital add-ons to compensate for the systemic importance of our bank to the economy in the absence of a central bank. Without a central bank from which we could borrow funds, liquidity management will be critical to the management of our consolidated balance sheet, and an inability to obtain sufficient liquidity could adversely affect our financial condition.

Certain jurisdictions in which we operate, including Bermuda, Guernsey and Jersey, have a Deposit Insurance Scheme or Deposit Compensation Scheme and we incur ongoing costs as a result.

As a bank licensed by the BMA, we are required to be a member of the Deposit Insurance Scheme ("DIS") and pay contributions to the Deposit Insurance Fund. Currently, our premium contribution is calculated by the Bermuda Deposit Insurance Corporation as 0.25% per annum of the average total amount of our Bermuda Dollar deposits that are covered by the DIS guarantee over a rolling three-month period, payable every three months in arrears. The amount of the contribution we are liable to pay may change from time to time as the total level of our insured Bermuda Dollar deposits changes; in addition, there is no guarantee that the current rate of premium contributions charged by the Bermuda Deposit Insurance Corporation will stay the same and not increase or that the Bermuda Deposit Insurance Corporation will not require additional contributions in the event that the Deposit Insurance Fund is insufficient to pay compensation due to insured depositors. We may also not be able to recover our contributions to the Deposit Insurance Fund from any failed institution whose insured depositors receive payments from the Deposit Insurance Fund. Any contributions we are required to make as part of the DIS (and any associated costs) are a cost to our business, and such costs, including any future increases, may have an adverse effect on our business, financial condition or results of operations.

As a bank licensed by the Guernsey Financial Services Commission, we are required to pay contributions to the Guernsey Deposit Compensation Scheme (the "Guernsey DCS"). Currently, we are required to pay an administration levy which is calculated by the Guernsey DCS Board. The amount of the contribution we are liable to pay may change from time to time and there is no guarantee that the current rate charged by the Guernsey DCS Board will stay the same and not increase. In the event of the failure of a Guernsey licensed bank, the Guernsey DCS Board will estimate the total level of compensation levy required and the Bank will be liable in equal shares with every other participant (i.e., every other licensed bank in Guernsey) for the first £10,000,000 and subject to certain caps for any one bank. If the total compensation levy exceeds £10,000,000, then the Bank will be liable on a pro-rata basis (calculated by reference to the total "value at risk" of our Guernsey deposits compared to the Guernsey market) with every other participant for the amount of such excess. We may also not be able to recover our contributions to the Guernsey DCS from any failed licensed bank whose insured depositors receive payments from the Guernsey DCS. Any contributions we are required to make as part of the Guernsey DCS (and any associated costs) are a cost to our business, and such costs, including any future increases, may have an adverse effect on our business, financial condition or results of operations.

The Jersey Bank Depositors Compensation Scheme ("Jersey DCS") is funded primarily through an upfront loan from the States of Jersey. In the event of a bank failing, levies would be raised on Jersey banks, subject to certain caps for banking groups over a five-year period, based on the proportion of protected deposits each bank holds to repay the loan. In the event that the full £100 million liability of the Jersey DCS was called upon, banks would contribute approximately two-thirds of funding, with the States of Jersey contributing one-third.

We are not currently required to pay any contributions to the Jersey DCS. Any contributions we may be required in future to make as part of the Jersey DCS (and any associated costs) are a cost to our business, and such costs, including any future increases, may have an adverse effect on our business, financial condition or results of operations.

Severe weather, natural disasters and potential impacts of climate change could disrupt our businesses and adversely affect our financial condition or results of operations.

The key markets in which we operate include Bermuda and the Cayman Islands and our business is therefore subject to the risks associated with severe tropical storms, hurricanes, tornadoes, earthquakes and rising sea levels, including downed telephone lines, flooded facilities, power outages, fuel shortages, damaged or destroyed property and equipment, and work interruptions. Although hurricanes in the Caribbean during 2020, 2021 and 2022 did not negatively impact the Bank's operations or cause any insurable losses, such severe weather conditions and natural disasters may, in the future, negatively impact us and our clients and their ability to meet their financial obligations to us, including the repayment of loans. Climate change may also aggravate the impact and increase the incidence of severe weather conditions and natural disasters, which may include altered distribution and intensity of rainfall, prolonged droughts or flooding, rising sea levels, and a rising heat index. Such events may, among other impacts, adversely affect borrowers, including resulting in an impairment of the value of property or other collateral used to secure the loans that we extend, as well as significantly impact the economies of the key markets in which we operate. The occurrence of any of these events could have a material adverse effect on our financial condition and results of operations.

In addition, we cannot predict whether we will continue to be able to obtain insurance for natural disaster or climate change-related damages to our premises or, if obtainable and carried, whether this insurance will be adequate to cover our losses. Moreover, we expect any insurance of this nature to be subject to substantial deductibles and to provide for premium adjustments based on claims, and we do not carry insurance against all types of losses. For these reasons, costs and work interruptions resulting from such events could have an adverse effect on our business, financial condition or results of operations.

A decline in tourism in Bermuda and the Cayman Islands could adversely affect our business, financial condition or results of operations.

Tourism is a major contributor to the economies of Bermuda and the Cayman Islands. A decline of this industry in Bermuda or the Cayman Islands could have adverse effects on the economic stability of these jurisdictions, and our business, financial condition or results of operations. In addition, a decline in tourism could lead to (i) decreases in the value of hotels and other commercial properties, which could adversely affect our commercial loan portfolio, and (ii) increases in unemployment, which could affect the ability of our residential borrowers to make payments on their loans.

The majority of the markets in which we operate do not have systemic credit bureau reports.

Unlike the US where the Fair Credit Reporting Act ("FCRA") is designed to help ensure that credit bureaus furnish correct and complete information when evaluating loan applications, the majority of the markets in which we operate do not have systemic credit bureau reports. Therefore, we review each loan and we use a formal and documented tiered credit approval process that is administered through and governed by our risk management framework. Due to limitations in the availability of information, our assessment of credit risk associated with a particular customer may not be based on complete, accurate or reliable information. In addition, although we have made and continue to make improvements to our credit scoring systems to better assess borrowers' credit risk profiles, we cannot provide assurance that our credit scoring systems collect complete or accurate information reflecting the actual behavior of customers or that their credit risk can be assessed correctly. Without complete, accurate and reliable information, we have to rely on other publicly available resources and our internal resources, which may not be effective. As a result, our ability to effectively manage our credit risk and subsequently our impairment losses and allowance for credit losses may be materially adversely affected. In addition, because our credit approval process involves detailed analyses of the customer or credit risk, taking into account both quantitative and qualitative factors, it is subject to human or information technology systems errors. In exercising

their judgment on current or future credit risk behavior of our customers, our employees may not always be able to assign an accurate credit rating, which may result in our exposure to higher credit risks than indicated by our risk rating system. In addition, we aim to continuously refine our credit policies and guidelines to address potential risks associated with particular industries or types of customers. However, we may not be able to timely detect all possible risks before they occur, or due to limited tools available to us, our employees may not be able to effectively implement them, which may increase our credit risk. Failure to effectively implement, consistently follow or continuously refine our credit risk management system may result in an increase in the level of nonperforming loans and a higher risk exposure for us, which could have a material adverse effect on us.

The COVID-19 pandemic and its effect on the global economy have continued to impact our customers and organization, and the future effects of the pandemic remain uncertain.

The COVID-19 pandemic created economic and financial disruptions that have adversely affected, and may in the future adversely affect, our business, financial condition, liquidity and results of operations. The extent to which the COVID-19 pandemic may continue to negatively affect our business, financial condition, liquidity and results of operations will depend on future developments, which are highly uncertain and cannot be predicted, including the emergence of new variants, the scope and duration of future infections and surges, the continued effectiveness of our business continuity plan, the direct and indirect impact of the pandemic on our employees, customers, clients, counterparties and service providers, as well as other market participants, actions taken by governmental authorities and other third parties in response to the pandemic, and the effectiveness and acceptance of COVID-19 vaccines, including boosters.

The COVID-19 pandemic has contributed, and may continue to contribute, to among other things: (i) sudden and significant declines, and significant increases in volatility, in global financial markets; (ii) ratings downgrades, credit deterioration and defaults of companies operating in many industries; (iii) supply chain disruptions, labor shortages and structural factors; and (iv) heightened cybersecurity, data privacy, information security and operational risks as a result of remote working arrangements or otherwise. In addition, many of our customers, counterparties and third-party service providers were, and may continue to be, affected by travel restrictions, quarantines and/or curfews in various jurisdictions, market volatility and other factors that increased their risks of business disruption or that otherwise could affect, or have affected, their ability to repay loans, perform under the terms of any agreements with us or provide other essential services. As a result, our credit, operational and other risks could increase if there are widespread infections and surges in the future.

Governmental authorities took measures in response to the pandemic, and may take action in the future, to provide economic assistance to individual households and businesses, stabilize the markets and support economic growth. The full duration and scope of the pandemic and related economic consequences remain unknown. Even after the pandemic materially subsides, our businesses would be materially and adversely affected by any subsequent, prolonged recession in the jurisdictions in which we have banking and trust operations. The impacts of the pandemic also have the effect of heightening many of the other risks set out in the "Risk Factors" section.

Risks Relating to Our Strategy, Brand, Portfolio and Other Aspects of Our Business

We rely on our reputation and the appeal of our brand to our customers. Any damage to our reputation and appeal could harm us and our business prospects.

The success of our strategy relies significantly on our reputation and the reputation of our senior management and the Board. In addition, our customers and key introducers must continue to associate our brand with meeting customer needs and delivering value to those customers. Adverse publicity (whether or not justified) relating to activities by our management, employees, agents or others with whom we do business, such as customer service mishaps or non-compliance with laws, could tarnish our reputation and reduce the value of our brand. With the increase in the use of social media outlets, adverse publicity can be disseminated quickly and broadly, making it increasingly difficult for us to effectively respond. Such unfavorable publicity could also require us to allocate significant resources to rebuild our reputation.

As a bank operating in Bermuda, the Cayman Islands, the Channel Islands and other international financial centers, we are subject to increasing scrutiny with respect to potential or alleged legal and regulatory breaches and unethical behavior and associated reputational risks, including with respect to the general perception and reputation of financial institutions in those jurisdictions, which may in turn be affected by factors including the EU list of non-cooperative jurisdictions for tax purposes, and policies on controversial industries such as gaming and cryptocurrencies, among others. See "Our business may be negatively impacted by the economic substance legislation and regulations in the jurisdictions in which we operate, including Bermuda, the Cayman Islands, and the Channel Islands." Any circumstance that causes real or perceived damage to our brand or reputation, or banking or wealth management generally in these jurisdictions, may negatively affect our relationships with our customers and key introducers, which would have an adverse effect on our business, financial condition or results of operations.

Potential reputational issues include, but are not limited to:

- breaching or facing allegations of having breached legal and regulatory requirements (including, but not limited to, conduct requirements, anti-money laundering requirements, anti-terrorism financing requirements, laws against assisting in tax evasion, cybersecurity and data protection laws, bribery and corruption);
- legacy issues we inherit from the businesses we acquire through a merger or acquisition;
- acting or facing allegations of having acted unethically (including having adopted inappropriate sales and trading practices);
- failing or facing allegations of having failed to maintain appropriate standards of customer privacy, customer service and record-keeping;
- failing to appropriately address potential conflicts of interest;
- experiencing technology failures that impact customer services and accounts;
- failing to properly identify legal, reputational, credit, liquidity and market risks inherent in products offered;
- failing to meet expectations from investors, customers, employees and regulators relating to environmental, social and governance standards and practices; and
- changing the terms of our product offerings and pricing that may result in outcomes for customers that are unfair or perceived to be unfair.

A failure to address the above or any other relevant issues appropriately could make customers unwilling to do business with us, which could have an adverse effect on our business, financial condition or results of operations and could damage our relationships with our employees and regulators.

The effect of inflation, rising interest rates and other macroeconomic factors has and may continue to negatively impact our net interest margin and our profitability.

Net interest income is a significant component of our revenues and changes in prevailing interest rates may adversely affect our business, including the level of net interest income we earn, and for our banking business, the levels of deposits and the demand for loans. Interest rates are highly sensitive to many factors that are beyond our control, including general economic conditions and policies of various governmental and regulatory agencies and, in particular, the U.S. Federal Reserve and the Bank of England. Changes in monetary policy, including changes in interest rates, influence not only the interest we receive on loans and investments and the amount of interest we pay on deposits and borrowings, but such changes also affect our ability to originate loans and obtain deposits, the fair value of our financial assets and liabilities and the average duration of our mortgage portfolio and other interest-earning assets.

In 2022, the strategy of central banks globally included the introduction of a series of interest rate increases. Additional rate hikes are expected to continue into 2023. As interest rates increase, our net interest income would narrow if our cost of funding increased without a correlating increase in the interest we earn from loans, investments and other interest-earn. Because we rely extensively on deposits to fund our operations, our cost of funding would increase if there is an increase in the interest rate we are required to pay our customers to retain their deposits, as is currently being experienced in our Channel Islands and UK segment. This could occur, for instance, if we are faced with competitive or regulatory pressures to increase rates on deposits. In addition, our cost of funding would increase if the interest rates we are required to pay for other sources of funding increases. Moreover, increases in interest rates may decrease customer demand for loans as the higher cost of obtaining credit may deter customers from seeking increases in or new loans. Further, the effects of inflation and rising interest rates may lead to liquidity issues for borrowers and debt covenant violations. An increase in interest rates may lead to the need for borrowers to amend the terms of existing debt agreements or obtain waivers if they no longer satisfy debt covenants. Changes to existing debt arrangements may represent restructuring, modification or extinguishment, which might lead to an increased number of delinquent loans and defaults, which would affect the value of our loans. Changes in interest rates may negatively affect the value of our assets and our ability to realize gains or avoid losses from the sale of those assets, all of which may also ultimately affect earnings and capital, as well as our regulatory solvency position.

Continued elevated levels of inflation could pose a risk to our financial performance.

Global economies, including the jurisdictions in which we operate, are experiencing elevated levels of inflation. The duration and severity of the current inflationary period is unknown and cannot be estimated with precision. Increased costs as a result of inflation could reduce our profit margins or could result in deposit outflows, which could also negatively impact our liquidity. Inflation may also result in reduced valuations on long duration financial assets and real estate and impact the value of collateral pledged for loans. Additionally, inflation has increased volatility and uncertainty in the business environment, which could adversely impact loan demand and our clients' ability to repay indebtedness. A failure to accurately anticipate higher inflation may result in mispricing of our products. As a result, a sustained period of high inflation in our key markets could adversely affect our business, financial position or results of operations.

Our loan and investment portfolios are subject to risk of prepayment, which could have a material adverse effect on us.

Our fixed rate loan and investment portfolios are subject to prepayment risk, which results from the ability of a borrower or issuer to pay a debt obligation prior to maturity. Generally, in a low interest rate environment, prepayment activity increases, which reduces the weighted average lives of our earning assets and could have a material adverse effect on us. For example, decreases in global market interest rates in 2020 and 2021 increased prepayment speeds and resulted in lower yields on the Bank's investments. Conversely in 2022, increases in global market interest rates decreased prepayment speeds resulting in higher yields on the Bank's investments. Prepayments also require us to recognize net premiums or commissions as income over a shorter period of time, thereby reducing the corresponding asset yield and net interest income. Prepayment risk also has a significant adverse impact on credit card and collateralized mortgage loans, since prepayments could shorten the weighted average life of these assets, which may result in a mismatch in our funding obligations and reinvestment at lower yields. Prepayment risk is inherent to our commercial activity and an increase in prepayments could have a material adverse effect on us.

The value of the securities in our investment portfolio may continue to decline in the future.

As at December 31, 2022, we owned \$5.7 billion of investment securities consisting primarily of securities issued by the US government and US governmental agencies and recorded net unrealized losses in our AFS and HTM portfolios of \$220.2 million and \$540.6 million, respectively, due to changes in fair value as a result of rapidly rising long-term market interest rates. In 2022, our investment portfolio had an average yield of 1.91%.

The fair value of our investment securities may continue to be adversely affected by market conditions, including future changes in interest rates and the occurrence of any events adversely affecting the issuers of particular securities in our investment portfolio. We perform periodic reviews to determine if a credit impairment exists. Our Group Asset and Liability Committee reviews the results of the impairment analysis and advises whether a credit impairment exists. The process for determining whether a credit impairment exists usually requires complex, subjective judgments about the future financial performance of the issuer of the relevant security in order to assess the probability of receiving all contractual principal and interest payments on the security.

We did not record any credit impairment losses on investments in the years ended December 31, 2022, 2021 and 2020. We may be required to recognize credit impairments in the future periods, which could have an adverse effect on our business, financial conditions or results of operations. See "- If we are unable to effectively manage our liquidity we may need to seek additional financing and our business, financial condition or results of operations could be adversely affected."

Volatility levels and fluctuations in foreign currency exchange rates may affect our business, financial position and results of operations.

We are exposed to foreign currency risk as a result of our holdings of foreign currency denominated assets and liabilities, investments in foreign subsidiaries, and future foreign currency denominated revenues and expenses. Fluctuations in exchange rates may raise the potential for losses resulting from foreign currency trading positions, where aggregate obligations to purchase and sell a foreign currency do not offset each other or offset each other in different time periods. Exchange rate volatility may have negative impacts on our business, financial position and results of operations. For example, the GBP/USD volatility experienced in the latter half of 2022 significantly impacted the value of GBP-denominated loans and deposits recorded on our consolidated balance sheets.

We also provide foreign exchange services to our clients, including trading on behalf of clients in all major currencies and providing hedging solutions to manage foreign exchange risk. Foreign currency volatility influences the level of client activity. Changes in client activity may result in reduced foreign exchange trading income.

In addition, the Bermuda Dollar and the Cayman Islands Dollar are pegged to the US Dollar at exchange rates of 1 Bermuda Dollar to 1 US Dollar and 1 Cayman Islands Dollar to 1.20 US Dollars, respectively. However, we cannot make assurances that these pegs will be maintained. In the event that the Bermuda Dollar or Cayman Islands Dollar is de-pegged or the current ratios are changed, including as a result of changes in laws, regulations or policies in these jurisdictions, the value of our financial position or results of operations could be adversely affected. Moreover, our US Dollar deposits are used to fund mortgages in Bermuda Dollars and Cayman Islands Dollars. As the Bermuda Dollar and the Cayman Islands Dollar are pegged to the US Dollar, we do not engage in hedging activities to counteract this currency risk. If the Bermuda Dollar or Cayman Islands Dollar ceased to be pegged to the US Dollar at the current ratios, however, we could be exposed to significant currency risks.

A decline in the residential real estate market, including in Bermuda, the Cayman Islands, the Channel Islands and the United Kingdom, could increase the risk of loans being impaired and could have an adverse effect on our business, financial condition or results of operations.

We are exposed to the risk that our borrowers may not repay their loans according to their contractual terms and that the collateral securing the payment of these loans may be insufficient. As at December 31, 2022, approximately 55% of our Bermuda loan portfolio, net of allowance for credit losses, was composed of residential mortgages in Bermuda; approximately 65% of our Cayman Islands loan portfolio, net of allowance for credit losses, was composed of residential mortgages in the Cayman Islands and approximately 86% of our Channel Islands and UK loan portfolio, net of allowance for credit losses, was composed of residential mortgages in the Channel Islands and the UK. A decline in the real estate market, in particular in Bermuda, the Cayman Islands, the Channel Islands and the UK, would mean that the collateral for our loans would hold less value. As a result, our ability to recover on defaulted loans by selling the underlying real estate would be diminished, and we would be more likely to suffer losses on the defaulted loans. Declines in the real estate market, including as a result of lower infrastructure spending in the markets in which we operate, could also adversely affect demand

for new loans, further decreasing the interest revenue generated by our loan portfolio. In addition, if our estimate for our allowance for credit losses proves to be inadequate, we will have to increase the allowance accordingly and may have future charge-offs. This may lead to impairment charges on loans and other assets, higher costs and higher incurred provisions for credit losses.

The risk of loan impairment may be compounded by the fact that there is limited economic and statistical data regarding the Bermuda, the Cayman Islands and the Channel Islands real estate markets. Although reliable and comprehensive economic and statistical data is available for certain real estate markets, such as the Case-Schiller Home Price Index in the United States, there is no comparable statistical data or mechanism to value the overall real estate market in all our markets. This lack of information makes it difficult to assess the market value of real estate in these markets, and requires us to rely on observations of the valuation of our own real estate originations in order to assess whether the value of mortgaged real estate has declined. See "The appraisals and other valuation techniques we use in evaluating and monitoring loans secured by real property may not accurately describe the net value of the collateral that we can realize." Any of the above factors could have an adverse effect on our business, financial condition or results of operations.

We could be negatively affected if the soundness of other financial institutions and counterparties deteriorates or if such counterparties, including clearing houses, are unwilling to do business with us, in particular in respect of US Dollar transactions.

Given the high level of interdependence between financial institutions, we are and will continue to be subject to the risk of actual or perceived deterioration in the commercial and financial soundness of other financial services institutions. Within the financial services industry, the default by any one institution could lead to defaults by other institutions. Concerns about, or a default by, one institution could lead to significant liquidity problems, losses or defaults by other institutions, because the commercial and financial soundness of many financial institutions may be closely related as a result of their credit, trading, clearing or other relationships. Even the perceived lack of creditworthiness of, or questions about, a financial institution may lead to market-wide liquidity problems and losses or defaults by us or by other institutions. This risk is sometimes referred to as "systemic risk" or "contagion" and may adversely affect financial intermediaries, such as clearing agencies, clearing houses and banks with whom we interact on a daily basis. In particular, BNYM and Wells Fargo Bank, N.A. ("Wells Fargo") act as clearing houses for all our US Dollar transactions. If BNYM's or Wells Fargo's ability to act as our clearing houses becomes impaired or BNYM or Wells Fargo cease to act as our clearing houses for any other reason and other financial institutions are not willing to provide the services currently provided to us by BNYM and Wells Fargo, we could lose our ability to engage in US Dollar transactions, which could lead to severe disruptions in our operations and adversely impact our business, financial condition or results of operations.

Our strategy includes expansion of our business through acquisitions of, or investments in, other companies or new products and services, but we may not be able to achieve regulatory approval for such transactions or be able to achieve the anticipated cost savings, growth opportunities and other benefits anticipated from such transactions.

We seek to grow both organically and through acquisitions. In the past several years, we have made various acquisitions and investments intended to complement and expand our businesses, including our September 2022 agreement with Credit Suisse to acquire its trust business in Singapore, Guernsey and The Bahamas, which is expected to be completed in 2023. Our long-term growth strategy includes identifying and effecting selective acquisitions in our core geographies, but we cannot be sure that we will be able to continue to identify suitable acquisition candidates or investment opportunities. Even if we identify suitable targets, there can be no assurance that we will be able to obtain the necessary funding on acceptable terms, if at all, to finance any of those potential acquisitions or investments.

We may also be required to obtain regulatory approval (including from the BMA) prior to any potential acquisition or investment depending on the transaction and the laws and regulations of the target's country of incorporation. Regulators consider a number of factors when determining whether to approve a proposed transaction, and we may have difficulty obtaining the necessary regulatory approvals, government permits or licenses required for such acquisitions. We may fail to pursue, evaluate or complete strategic and competitively significant business opportunities as a result of our inability, or our perceived inability, to obtain any required regulatory approvals in a timely manner or at all.

Even where we are able to complete an acquisition or an investment, we cannot be sure that such acquired entity, business or asset or such investment will perform in line with our assumptions or expectations or otherwise complement our business or strategy due to a variety of factors, including lower revenues than expected, unforeseen operating difficulties and expenditures, customer loss and business disruption (including, without limitation, difficulties in maintaining relationships with employees, customers, clients or suppliers) and risks associated with the disruption of management's attention from ongoing business operations due to acquisition and integration activities.

In addition, integrating an acquired company, business or technology possesses significant risks, including, among other things:

- the incorporation of new technologies into our existing business infrastructure;
- the maintenance of standards, controls, procedures and policies throughout the organization (including effective internal controls over financial reporting and disclosure controls and procedures);
- the consolidation of our corporate or administrative functions;
- the coordination of our sales and marketing functions to incorporate the new business or technology;
- the potential for liabilities and claims arising out of the acquired businesses;
- the integration of corporate cultures;
- the maintenance of morale, retention and integration of key employees to support the new business or technology and management of our expansion in capacity; and
- compliance with the regulatory regimes of newly entered jurisdictions.

In addition, a significant portion of the purchase price of companies that we may acquire may be allocated to goodwill and other intangible assets. Intangible assets are tested for impairment annually or when there is a triggering event requiring such testing; an intangible asset that is subject to amortization is periodically reviewed for impairment. Goodwill is tested for impairment on an annual basis. As at December 31, 2022, we had \$22.9 million and \$51.5 million of goodwill and intangible assets, respectively. In the future, if our acquisitions do not yield expected returns or there are changes in discount rates, we may be required to take additional charges to our earnings based on the impairment assessment process, which could harm our business, financial condition, results of operations and prospects.

If we are unable to effectively manage our liquidity we may need to seek additional financing and our business, financial condition or results of operations could be adversely affected.

We need liquidity to pay our operating expenses, to fund depositor withdrawals, interest on our debt and dividends on our common shares, and to replace certain maturing liabilities. Without sufficient liquidity, we will be forced to curtail our operations and our business will suffer.

Our main source of funding is customer deposits. As at December 31, 2022, we had \$13.0 billion in deposits (55% USD deposits, 19% USD-pegged deposits), with 35% of our deposits derived from our Bermuda segment, 33% from the Cayman Islands segment, and 32% from the Channel Islands segment. In addition, we source funding

from net income generated by the Bank, net of dividends paid, and to a lesser extent from other sources including the sale of securities to institutional counterparties under repurchase agreements and the sale of equity securities and AFS securities. Our deposit base includes both demand and term liabilities, with the significant majority of such deposits being demand deposits or are due within six months. Because we rely primarily on short-term deposits for funding, a sudden or unexpected shortage of funds in the banking systems in which we operate may prevent us from obtaining necessary funding without incurring higher costs. Our deposit base includes deposits from commercial and institutional clients which may be more sensitive to financial strength rating changes. A significant withdrawal of deposits in either of these markets could significantly affect our liquidity and our ability to meet our funding needs.

In addition, as a bank with subsidiaries located in various jurisdictions, the Bank's access to inter-company funds can be restricted because our regulated banking subsidiaries are required to maintain certain liquidity ratios or minimum levels of capital in accordance with the laws of the jurisdictions in which they operate or otherwise. The necessity of maintaining these ratios or levels of capital or other liquidity considerations could restrict the ability of these subsidiaries to transfer funds to us, in the form of cash dividends, loans or advances.

In the event that our current resources do not satisfy our needs, we may need to seek additional financing. The availability of additional financing will depend on a variety of factors, such as market conditions, the general availability of credit, the volume of trading activities, the overall availability of credit to the financial services industry, our credit ratings and credit capacity, as well as the possibility that customers or lenders could develop a negative perception of our long- or short-term financial prospects, including as a result of economic uncertainty or any downgrade in sovereign credit ratings in key markets in which we operate.

We rely on third parties to provide services that are integral to our ordinary operations, and their failure to perform in a satisfactory manner could negatively affect us.

We rely on third parties to provide services that are integral to our ordinary course operations, including providers of information technology, administrative or investment advisory services. These third party supported functions or operating systems may not function properly, become insufficient to support our evolving business needs or become defective or damaged as a result of a number of factors including events beyond our control. Enhancements and upgrades to third party supported infrastructure or operating systems entail significant time and costs, and create risks associated with implementing new systems and integrating them with existing ones. Due to the complexity of our systems, across multiple jurisdictions and product types, the process of enhancing our infrastructure and operating systems, including their security measures and controls, can create a risk of system disruptions and security issues. Similarly, we may not be able to timely recover critical business processes or operations that have been disrupted, which may further increase the associated costs and consequences of such disruptions. Although we have business continuity plans in place, cybersecurity and other safeguards in place to help provide operational resiliency, our business operations may be adversely affected by significant and prolonged disruption to our operating systems that support our businesses and customers. Furthermore, third parties on which we rely, could also introduce operational risk to us, including from information breaches or loss, breakdowns, cyber incidents, disruptions or failures of their own systems or infrastructure, or any deficiencies in the performance of their responsibilities. A material breach of customer data may negatively impact our business reputation and cause a loss of customer business; may result in increased expense to contain the event and/or require that we provide credit monitoring services for affected customers; may result in regulatory fines and sanctions; and/or may result in litigation. We rely on our outsourced service providers to implement and maintain prudent cybersecurity controls. We have procedures in place to assess a vendor's cybersecurity controls prior to establishing a contractual relationship and to periodically review assessments of those control systems; however, these procedures are not infallible and a vendor's system can be breached despite the procedures we employ. In addition, outsourcing is subject to regulatory controls in certain jurisdictions in which we operate and we may not always be able to obtain approval to outsource on terms available or sought by us, which could adversely affect our ability to enter into outsourcing arrangements.

In addition, BNYM and Wells Fargo act as clearing houses for all our US Dollar transactions and, if our relationships with BNYM and Wells Fargo are terminated, we could lose our ability to engage in US Dollar transactions. For more information see " - We could be negatively affected if the soundness of other financial institutions and counterparties deteriorates or if such counterparties, including clearing houses, are unwilling to do business with us, in particular in respect of US Dollar transactions."

Changes in banks' inter-bank lending rate reporting practices and the phase-out of the London Interbank Offered Rate ("LIBOR") may adversely affect our business and results of operations.

For several years, global regulators and central banks have been pursuing international efforts to reform interest rate benchmarks, such as the London Interbank Offered Rate ("LIBOR"). In July 2017, the UK Financial Conduct Authority ("FCA"), which regulates LIBOR, announced that the FCA will no longer persuade or compel banks to submit rates for the calculation of LIBOR after 2021. On March 5, 2021, the FCA and ICE Benchmark Administration, the authorized and regulated administrator of LIBOR, announced that all the GBP, CHF, JPY, EUR LIBOR settings and the one-week and two-month USD LIBOR settings will cease after December 31, 2021, and the remaining USD LIBOR settings will cease after June 30, 2023.

Uncertainty as to the nature of potential changes, alternative reference rates or other reforms may adversely affect market liquidity, the pricing of LIBOR-based instruments and the availability and cost of associated hedging instruments and borrowings. Payments under contracts referencing new reference rates may differ from those referencing LIBOR. The transition may change the Bank's risk profile and require changes to its risk and pricing models, valuation tools, product design and hedging strategies. Although the Bank is unable to quantify the ultimate impact of the transition from LIBOR given the uncertain nature of the potential changes, it continues to monitor the developments related to the future of LIBOR in line with any regulatory or quasi-regulatory guidance. Moreover, the failure to manage any potential transition from LIBOR to a different reference rate, or rates, may adversely affect the Bank's reputation, business and financial condition, and results of operations. As at December 31, 2022, the Bank had 72 loans totaling \$290.8 million linked to LIBOR. This excludes one-week and two-month USD LIBOR which have already transitioned.

We face competition in all aspects of our business, and may not be able to attract and retain wealth management, trust and banking clients at current levels.

We compete with a broad range of financial institutions. Many of our competitors are larger and have broader ranges of product and service offerings, increased access to capital, and greater efficiency and pricing power. We face competition from other lending institutions and from numerous other providers of financial services, including the following:

- *Non-banking financial institutions.* The ability of these institutions to offer services previously limited to commercial banks has intensified competition. Because non-banking financial institutions are not subject to the same regulatory restrictions as banks, they can often operate with greater flexibility and lower cost structures; and
- *Competitors that have greater financial resources.* Some of our larger competitors, including certain international banks that have a significant presence in our market area, may have greater capital and resources and higher lending limits and may offer products, services and technology that we do not. We cannot predict the reaction of our customers and other third parties with respect to our financial or commercial strength relative to our competition, including our larger competitors.

In our banking business, we face competition mainly from other local banks, such as Bermuda Commercial Bank and Clarien Bank in Bermuda and from Cayman National Corporation in the Cayman Islands, as well as from subsidiaries of international banks, being Royal Bank of Canada in the Cayman Islands and HSBC in Bermuda, whom we view as our most significant competitors. In our wealth management business line, we face competition from local competitors, as well as much larger financial institutions, including financial institutions that are not based in the markets in which we operate. Revenues from the trust and wealth management business depend in large part on the level of AUA.

In our trust business, we face competition primarily from other specialized trust service providers. Many of our competitors in the international financial sector offer fund administration and corporate services work alongside private client fiduciary services.

Our ability to successfully attract and retain trust, wealth management and banking clients is dependent upon our ability to compete with competitors' investment products, retail products and services, level of investment performance, client services and marketing and distribution capabilities. If we are not successful, our business, financial condition or results of operations may be adversely affected.

The addition of new products and services, or modified products or services may subject us to implementation and reputational risk.

From time to time, we may introduce new activities or new technology through new products and services within business entities (e.g. in Guernsey and Jersey we are introducing retail products such as residential mortgages and credit cards). There may be substantial risks and uncertainties associated with these efforts. Insufficient planning may lead to an incomplete assessment and understanding of associated risks involved with new activities and may result in inadequate oversight and controls. New activities may increase strategic risk where not compatible with the bank's risk appetite or strategic plan or do not provide an adequate return on investment; engagement of new activities without adequate due diligence and failure to provide adequate resources, expertise and experience to properly implement and oversee new activities. This can increase reputational risk and negative public opinion. Failure to successfully manage these risks in the development and implementation of new lines of business or new products or services could have a material adverse effect on our business, financial condition, and results of operations.

The Bank's credit ratings have a direct effect on its competitive position, and declines in the Bank's ratings may increase the cost of borrowing funds and make our ability to raise new funds, attract and retain deposits or renew maturing debt more difficult, which may negatively affect long-term and short-term funding.

The Bank's credit strength ratings are an important component of its liquidity profile and competitive position. Ratings show each agency's view of our financial strength, operating performance and ability to meet debt obligations as they become due. Nationally recognized statistical rating organizations ("NRSROs") periodically review the financial performance and condition of banks and may downgrade or change the outlook on a bank's ratings due to, for example: a change in a bank's regulatory capital ratios; a change in an NRSRO's determination of the amount of capital cushion required to maintain a particular rating; an increase in the perceived risk of a bank's investment portfolio; reduced confidence in management; or other considerations that may or may not be under our control. The Bank has credit ratings from Standard & Poor's ("S&P"), Moody's Investor Service ("Moody's") and Kroll Bond Rating Agency ("KBRA"). Each of the rating agencies reviews its ratings and rating methodologies on a recurring basis and may decide on a downgrade at any time. The Bank's ratings as at December 31, 2022 are shown in the table below:

	Ratings		
	KBRA	Moody's	S&P
Long-term issuer	A+	A3	BBB+
Short-term issuer	K1	P-2	A-2
Subordinated debt		A3	
Long-term counterparty risk assessment		A2	
Short-term counterparty risk assessment		P-1	

A downgrade in our credit ratings could adversely affect clients' perception of us and our ability to compete successfully in the marketplace for deposits (or result in the withdrawal of deposits). A downgrade in our short-term debt ratings may affect our short-term funding capabilities. There has been no measurable correlation or effect on deposit levels during previous downgrades and, as a result, historically, no material impacts on the Bank's operations or results.

Negative changes in the Bank's long-term credit ratings would also likely increase the cost of raising long-term funding in the capital markets or of borrowing funds. Even where we can access the capital markets, negative changes in our ratings could affect our share price and make any equity offerings more difficult and dilutive to current shareholders, further driving down the Bank's share price. Our ability to replace maturing or existing debt may be more difficult and expensive. In addition, our lenders and counterparties in derivative transactions are sensitive to the risk of a ratings downgrade. However, we may issue additional debt securities in the future which may increase the impact of a one-notch downgrade in credit ratings.

Management cannot predict what actions rating agencies may take, or what actions we may take in response to the actions of rating agencies that could adversely affect our business. As with other companies in the financial services industry, our ratings could be downgraded at any time and without any notice by any NRSRO, which could adversely affect our business, financial conditions or results of operations.

We could fail to attract, retain or motivate highly skilled and qualified personnel, including our senior management, other key employees or members of the Board, which could adversely affect our business.

Our ability to implement our strategic plan and our future success depends on our ability to continue to attract, retain and motivate highly skilled, diverse and qualified personnel, including our senior management and other key employees and directors, competitively with our peers. The marketplace for skilled personnel is competitive, which means the cost of hiring, incentivizing and retaining skilled personnel may continue to increase. For example, labor shortages and increased turnover in recent years has increased the cost of hiring, incentivizing and retaining skilled personnel. Increased turnover and the shortage of employees may put stress on internal control environments. While the Bank has experienced slightly higher turnover levels in 2022 as compared to historical averages, we don't consider them to be material or systemic in nature. The failure to attract or retain, including as a result of an untimely death or illness of key personnel, or replace a sufficient number of appropriately skilled and key personnel could place us at a significant competitive disadvantage and prevent us from successfully implementing our strategy or effectively managing our risk framework and business operations. This could impair our ability to implement our strategic plan successfully, achieve our performance targets and otherwise have an adverse effect on our business, financial condition or results of operations.

We may also be unable to attract and retain staff due to our locations. Many of our employees are employed in Bermuda, the Cayman Islands, and the Channel Islands, which are small markets. Therefore, location may be an impediment to attracting and retaining experienced personnel. Further, immigration laws in small markets impose limitations on attracting experienced personnel.

In addition, governmental scrutiny with respect to matters relating to compensation and other business practices in the financial services industry has increased dramatically in the past several years and has resulted in more aggressive and intense regulatory supervision in certain markets in which we operate or are regulated. Future legislation or regulation or government views on compensation may result in us altering compensation practices in ways that could adversely affect our ability to attract and retain talented employees.

Our business is subject to risks related to litigation and regulatory actions.

We are, from time to time, involved in various legal and regulatory proceedings arising from our normal business activities. These claims and legal actions, including supervisory actions by our regulators or proceedings or investigations brought by other regulators, could involve large monetary claims and significant defense costs. The outcome of these cases is uncertain. Substantial legal liability or significant regulatory action against us could have material financial effects or cause significant reputational harm to us, which in turn could seriously harm our business, financial condition, results of operations and prospects. We may be exposed to substantial uninsured liabilities, which could materially affect our results of operations and financial condition.

As previously publicly announced, in November 2013, the USAO applied for and secured the issuance of so-called John Doe Summonses to six US financial institutions with which the Bank had correspondent bank relationships. The purpose of these summonses was to identify US persons who may have been using our banking, trust, or other services to evade their own tax obligations in the United States. The Bank cooperated with the US authorities in their investigation and reached a resolution with the US Department of Justice in July 2021. The resolution was in the form of a non-prosecution agreement with a three-year term and payment of \$5.6 million.

Requirements and expectations from our regulators and other stakeholders on environmental, social and governance issues could significantly impact our business.

Regulators, investors and customers are increasingly focused on ESG issues. Certain of our regulators have proposed or adopted, or may propose or adopt, ESG-related rules or standards that could apply to our business. Other stakeholders have also proposed or adopted ESG-related standards or policies, and may evaluate our business and other practices according to such requirements, standards and policies, which are continually evolving and not always clear. ESG regimes in different jurisdictions and ESG standards used by different stakeholders may also impose different and potentially conflicting requirements, or reflect inconsistent or conflicting values or agendas. See also "- Our international business model exposes us to various and possibly conflicting regulatory regimes across multiple jurisdictions."

We may need to incur significant costs in order to meet the expectations of our regulators and other stakeholders on ESG issues. Our policies and processes to evaluate and manage ESG standards in coordination with other business priorities may not prove completely effective or satisfy regulators, investors, customers, or other stakeholders. As a result, we could face adverse regulatory, investor, customer, media, or public scrutiny leading to business, reputational, or legal challenges.

Risks Relating to Operations, Risk Oversight and Internal Controls

Our operations are reliant on effective implementation and use of technology and require us to adapt to new technologies, and a breach, interruption or failure of our technology services or the inability to effectively integrate new technologies could have an adverse effect on our business, financial condition or results of operations.

We rely heavily on communications and information systems to conduct business. In particular, we rely on technology to provide key components of our information system infrastructure, including loan, deposit and general ledger processing, risk management information collection and processing for internal control purposes, internet connections and network access. Any disruption in service of these key components, for example due to system errors, a natural catastrophe, or the termination of any third-party software licenses upon which any of these systems is based, could adversely affect our ability to effectively deliver products and services to clients, to detect, assess and manage risk and otherwise to conduct operations. See "- We rely on third parties to provide services that are integral to our ordinary operations, and their failure to perform in a satisfactory manner could negatively affect us." Furthermore, any security breach, due to computer viruses, programming, malfeasance or human errors or other events or developments, of information systems or data, whether managed by us or third parties, could interrupt our business, harm our reputation or cause a decrease in the number of clients using our services. The financial services industry is continually undergoing rapid technological change with frequent introductions of new, and technology-driven products and services. We face the risk of having to establish and maintain further improved technological capabilities, and our future success depends, in part, on our ability to recognize and implement new technologies to address our operational and internal control needs, operational efficiencies and to meet the demands of our clients. See "- Cyber-attacks, distributed denial of service attacks and other cybersecurity matters, if successful, could have an adverse effect on our business, financial condition or results of operations."

The widespread adoption of new technologies, including cryptocurrencies and payment systems, could require substantial expenditures to modify or adapt our existing products and services as we continue to grow our internet and mobile banking capabilities or other technological-based distribution channels. The persistence or acceleration of this shift in demand towards internet and mobile banking may necessitate changes to our retail distribution strategy, which may include restructuring our branches and work force. These actions could lead to losses on these assets and may lead to increased expenditures to reform our retail distribution channel.

Many of our competitors have substantially greater resources to invest in technological improvements than we do. We may not be able to effectively implement new, technology-driven products and services or be successful in marketing these products and services to our customers. In addition, the implementation of technological changes and upgrades to maintain current systems and integrate new ones may also cause service interruptions, transaction processing errors and system conversion delays and may cause us to fail to comply with applicable laws. Failure to successfully keep pace with technological change affecting the financial services industry and avoid interruptions, errors and delays could have an adverse effect on our business, financial condition, results of operations, or competitive position.

Cyber-attacks, distributed denial of service attacks and other cybersecurity matters, if successful, could have an adverse effect on our business, financial condition or results of operations.

In the ordinary course of business, we rely on electronic communications and information systems to conduct our operations and store sensitive, proprietary or confidential data. The secure processing, storage, maintenance and transmission of this data is critical to our operations and reputation. We are under continuous threat from cyber-attacks, especially as we continue to expand customer capabilities to utilize the internet and other remote channels to transact business. If any of our data were mishandled, misused, improperly accessed, lost or stolen, or if our operations were disrupted, we could suffer significant financial, reputational or other damages. Two of the most significant cyber-attack risks that we face are e-fraud and loss of sensitive customer data. These risks may be more likely where third party vendors have access to or process data on our behalf. While such attacks are infrequent, they could present significant reputational, legal and regulatory costs to us if successful. In addition, the nature of cyber-attacks is constantly and rapidly evolving, and attempts to infiltrate our systems may not be recognized until launched against us and in some cases are designed not to be detected. Although we make significant efforts to maintain the security and integrity of our information systems, there can be no assurances that our security measures will be effective.

Third parties with whom we or our customers do business also present operational and information security risks to us, including security breaches or failures of their own systems. Cyber-attacks at third party service providers are also becoming increasingly common and, as a result, risks relating to cyber-attacks on our vendors have been increasing. We also face risks related to cyber-attacks and other security breaches in connection with credit card transactions that typically involve the transmission of sensitive information regarding our customers through various third parties, including merchant acquiring banks, payment processors, payment card networks (e.g., Visa or Mastercard), our processors, and clearing banks. Some of these parties have in the past been the target of security breaches and cyber-attacks, and because the transactions involve third parties and environments such as the point of sale that we do not control or secure, future security breaches or cyber-attacks affecting any of these third parties could impact us through no fault of our own, and in some cases we may have exposure and suffer losses for breaches or attacks relating to them, including from remediation costs, increased

future protection costs, reputational harm, loss of customers and potential regulatory inquiries and/or civil litigation. We also rely on numerous other third-party service providers to conduct other aspects of our business operations and face similar risks relating to them.

Our increased use of cloud and other technologies may expose us to security weaknesses that may increase our risks to data breaches, data loss, data leakage, account hijacking, insecure application programming interfaces and other potential cyber-risk events. Many of our employees (and staff of service providers) now work remotely or from other sites. These working arrangements could potentially provide increased opportunities for cyber threat actors to exploit. We cannot provide assurances that the safeguards we have put in place or may implement in the future will prevent all unauthorized infiltration or breach, or that we will not suffer material losses related to a security breach in the future.

In recent years, U.S. regulators, including the FDIC, SEC, and the Financial Industry Regulatory Authority ("FINRA"), have made statements concerning cybersecurity risk management, preparedness and resiliency for financial institutions such as us. These statements range from issues with respect to client account protections to business continuity, and represent the regulators' expectations for financial institutions to have more robust cybersecurity risk management and a preparedness and resiliency program for themselves and their service providers. A financial institution is also expected to develop processes to enable recovery of data and business operations and address rebuilding network capabilities and restoring data if the institution, or its critical service providers, fall victim to this type of cyber-attack. Any cyber incidents, such as those of our third party vendors, could result, among other things, in increased regulatory scrutiny and adverse regulatory or civil litigation consequences.

The occurrence of a cyber-threat scenario could cause interruptions in our operations and result in the incurrence of significant costs, including those related to forensic analysis and legal counsel, each of which may be required to ascertain the extent of any potential harm to our customers, or employees, or damage to our information systems and any legal or regulatory obligations that may result therefrom. The occurrence of a cyber-threat may therefore have a material adverse effect on our financial condition and results of operations. Risks and exposures related to cybersecurity attacks are expected to remain high for the foreseeable future due to the rapidly evolving nature and sophistication of these threats, as well as due to the expanding use of Internet banking, mobile banking and other technology-based products and services by us and our clients.

Due to the increasing sophistication of such attacks, we have not been able, and may in the future not be able, to prevent denial-of-service or other cyber-attacks that could compromise our normal business operations or the normal business operations of our clients, or result in the unauthorized use or disclosure of clients' confidential and proprietary information. The occurrence of any failure, interruption or security breach of network and computer systems resulting from denial-of-service or other cyber-attacks or security incidents could impact our ability to operate and serve our clients, damage our reputation, result in a loss of client business, subject us to additional regulatory scrutiny, or expose us to civil litigation and possible financial liability, any of which could adversely affect our business, results of operations or financial condition.

Our risk management and compliance framework, systems and process, and related guidelines and policies, may prove inadequate to manage our risks, and any failure to properly assess or manage such risks could harm us.

We maintain an enterprise risk management program that is designed to identify, quantify, monitor, report and control the risks we face. We also maintain a compliance program to identify, measure, assess and report on adherence to applicable laws, policies and procedures. Our approach to risk management requires senior management to make complex judgments, including decisions (based on assumptions about economic factors) about the level and types of risk that we are willing to accept in order to achieve our business objectives. These also include the maximum level of risks we can assume before breaching constraints determined by regulatory capital and liquidity needs and our regulatory and legal obligations including, among others, from a conduct and prudential perspective. Given these complexities, and the dynamic environment in which we operate, the decisions made by senior management may not be appropriate or yield the results expected. In addition, senior management may be unable to recognize emerging risks quickly enough for us to take appropriate action in a timely manner. There can be no assurances that our framework for risk management, compliance and related controls will effectively mitigate risk and limit financial losses for our operations.

Our controls and procedures may fail or be circumvented, which could have an adverse impact on our business, financial condition or results of operations.

We face the risk that the design of our controls and procedures that govern operations, financial reporting and compliance across jurisdictions, including those to mitigate the risk of human error, fraud or breach of fiduciary duties relating to our trust services by employees or outsiders, or to monitor financial reporting, may be inadequate, circumvented or exposed to variations in compliance at the local level, thereby causing inaccuracies in data and information or delays in the detection of errors. At present, we do not have a uniform core banking platform in place across the jurisdictions in which we operate and, therefore, we need to use manual processes to compile certain financial information from certain subsidiaries. Moreover, in the past, our information technology capabilities in Bermuda and other jurisdictions have experienced difficulties with certain identified weaknesses, including internal control deficiencies in our operations (including interest rate calculation functions). To address this, we used manual processing, data spreadsheets or a combination thereof. Use of such manual procedures and data spreadsheets presents financial reporting and operational risks and increases the importance of staff compliance with internal operating and security procedures. In addition, we may incur operational losses due to non-compliance by our staff with internal operating and control procedures and arising from human error. Any failure or circumvention of our controls and procedures or failure to comply with any current or future regulations related to controls and procedures could have an adverse effect on our business, financial condition or results of operations.

Regulatory and Tax-Related Risks

We operate in a complex and changing regulatory environment and legal and regulatory changes or our failure to comply with laws and regulations could have a negative impact on our business, financial condition or results of operations.

Our business is subject to ongoing changes in laws, regulations, policies, voluntary codes of practice and interpretations in the markets in which we operate. We currently face an increasingly extensive and complex set of laws, regulations and standards as a result of the concerns enveloping the global financial sector. We are exposed to potential changes in governmental or regulatory policies, price controls, capital controls, exchange controls, other restrictive actions, unfavorable political and diplomatic developments, and changes in legislation.

Some areas of potential regulatory change involve multiple jurisdictions seeking to adopt a coordinated approach. This may result in conflicts with specific requirements of the jurisdictions in which we operate and, in addition, such changes may be inconsistently introduced across jurisdictions. See "- Our international business model exposes us to various and possibly conflicting regulatory regimes across multiple jurisdictions."

Changes may also occur in the oversight approach of regulators. It is possible that governments in jurisdictions in which we operate or obtain funding might revise their application of existing regulatory policies that apply to, or impact, the Bank's business, including for reasons relating to national interest and/or systemic stability. The powers exercisable by our regulators may also be expanded in the future.

Regulatory changes and the timing of their introduction continue to evolve and we manage our businesses in the context of regulatory uncertainty. The nature and impact of future changes are not predictable and are beyond our control. Regulatory compliance and the management of regulatory change are an important part of our planning processes. We expect that we will be required to continue to invest significantly in compliance and the management and implementation of regulatory change and, at the same time, significant management attention and resources will be required to update existing, or implement new, processes to comply with new regulations.

Changes and restrictions imposed by our primary lead regulator, the BMA, and other regulators may also impact our operations by requiring us to have increased levels of liquidity, and higher levels of, and better quality, capital and funding, as well as placing restrictions on the businesses we conduct (including limiting our ability to provide products and services to certain customers), requiring us to amend our corporate structure or requiring us to alter our product or service offerings. If a regulatory change has any such effect, it could adversely affect one or more of our businesses, restrict our flexibility, require us to incur substantial costs and impact the profitability of one or more of our business lines. Any such costs or restrictions could adversely affect our business, prospects, financial performance or financial condition.

Our failure or inability to fully comply with the laws and regulations could lead to fines, public reprimands, reputational damage, civil liability, enforced suspension of operations or, in extreme cases, withdrawal of authorization to operate, which could adversely affect our business, financial condition, results of operations or prospects. We could also be required to incur significant expenses to comply with new or revised regulations. Future developments or changes in laws, regulations, policies, voluntary codes of practice and their effects may require greater capital resources and significant management attention, and may require us to modify our business strategies and plans.

The costs of complying with, or our failure to comply with, US and foreign laws related to privacy, data security and data protection, such as the EU General Data Protection Regulation, could adversely affect our financial condition, operating results and reputation.

Regulatory authorities have increased their focus on how companies collect, process, use, store, share and transmit personal data. New privacy security laws and regulations, including the UK's Data Protection Act 2018, the Data Protection (Jersey) Law 2018, the Data Protection (Bailiwick of Guernsey) Law 2017, The Cayman Islands Data Protection Law 2017 (which became effective on September 30, 2019), Bermuda's Personal Information Protection Act 2016, and the EU General Data Protection Regulation 2016, pose increasingly complex and rigorous compliance challenges, which may increase our compliance costs. Any failure to comply with data privacy laws and regulations could result in significant penalties, fines, legal challenges and reputational harm. See Item 4.B. "Business Overview - Supervision and Regulation".

Failure to comply with any applicable anti-corruption legislation could result in fines, criminal penalties and an adverse effect on our business, financial condition or results of operations.

We must comply with all applicable laws and regulations, which include anti-corruption, anti-money laundering, international financial sanctions and anti-terrorist financing laws and regulations. Recently, there has been a substantial increase in the global enforcement of these laws and regulations, in particular in respect of the financial services industry. The measures and procedures we have in place may not be entirely effective in preventing third parties from using us (and our correspondent banks) as a conduit for money laundering (including illegal cash operations), terrorist financing or other financial crimes without our (and our correspondent banks') knowledge or consent. Although, as of the date of this report, we have not been subject to any fines or penalties, as a result of violations of anti-money laundering and counter-terrorism laws and regulations, there can be no assurances that we will not be subject to such fines, penalties or losses or harm in the future. If we were to be associated with money laundering (including illegal cash operations) or terrorist financing, our reputation could be harmed and we could become subject to fines, sanctions or legal enforcement (including being added to any "blacklists" that would prohibit certain parties, potentially including US Dollar clearing banks, from engaging in transactions with us), which could have an adverse effect on our business, financial condition or results of operations.

Our international business model exposes us to various and possibly conflicting regulatory regimes across multiple jurisdictions.

Our international business model exposes us to different regulatory schemes across multiple jurisdictions. Although our central management and a large part of our business are located in Bermuda, our operations are spread throughout ten international jurisdictions. In addition to the logistical and communications challenges this creates, the financial services industry is heavily regulated in many jurisdictions, and each line of the business is exposed to different, constantly evolving and possibly conflicting regulatory schemes. Our management has enacted internal controls and procedures that are designed to result in compliance with these regulatory schemes, which are periodically reviewed and updated, but in the future we might have difficulty meeting and remaining in compliance with existing or new regulatory requirements imposed by a particular jurisdiction, particularly in light of the increasing regulatory scrutiny of financial institutions and their subsidiaries. Our current internal controls for one jurisdiction may not sufficiently comply with the demands of increased oversight in another jurisdiction.

To the extent we are unable to comply with the regulatory scheme of a particular jurisdiction, we might not be able to operate in that jurisdiction, or we may incur fines or penalties for compliance failures or incur costs in order to remediate compliance failures, any or all of which could adversely affect our business, financial condition or results of operations.

The Financial Action Task Force ("FATF") may identify any of the jurisdictions in which we operate as a jurisdiction which has systemic anti-money laundering and/or anti-terrorist financing deficiencies, which could have an adverse effect on our business.

The FATF is an international body that identifies jurisdictions with weak measures to combat money laundering and terrorist financing in public documents published three times a year. FATF and its regional bodies work with such jurisdictions, governments, and regulatory bodies and report on progress made in addressing identified deficiencies. Such reviews are at a country level, rather than an entity-specific level. Thus, while the Bank can have in place globally accepted standards to fight money laundering and terrorist financing, the existing regulations in any of the jurisdictions in which we operate may not meet FATF requirements. Failure to comply with FATF standards by any jurisdictions in which we operate could adversely affect our reputation and our ability to obtain financing from the international markets and attract foreign investments.

Our business may be negatively impacted by the economic substance legislation and regulations in the jurisdictions in which we operate, including Bermuda, the Cayman Islands, and the Channel Islands.

In 2018, all major offshore jurisdictions enacted legislation in response to new requirements imposed by the EU's ECOFIN regarding the need for entities registered in offshore jurisdictions to demonstrate economic substance. Compliance with these requirements is necessary to avoid a jurisdiction being placed on the EU's list of non-cooperative jurisdictions for tax purposes. Many of the jurisdictions in which we operate, including Bermuda, the Cayman Islands, The Bahamas, Guernsey and Jersey have enacted legislation that requires entities registered, incorporated or continued under certain legislation in the respective jurisdictions engaged in "relevant activities" (which includes engaging in banking or financing activities) to satisfy economic substance requirements by maintaining a substantial economic presence in the respective jurisdiction. For example, in December 2018, Bermuda passed The Economic Substance Act 2018, the Cayman Islands passed the International Tax Co-operation (Economic Substance) Law, The Bahamas passed the Commercial Entities (Substance Requirement) Act, Guernsey passed the Income Tax (Substance Requirements) (Implementation) Regulations, 2018 and Jersey passed the Taxation (Companies - Economic Substance) (Jersey) Law 2019. Any entity that must satisfy economic substance requirements but fails to do so could face financial penalties, a restriction of its business activities or being struck-off as a registered entity in the relevant jurisdiction.

In October 2022, The Bahamas was added to the EU's list of non-cooperative jurisdictions for tax purposes as the EU's ECOFIN concluded that they failed to adequately address a number of recommendations of the OECD Forum on Harmful Tax Practices in connection to the enforcement of economic substance requirements. From February to October 2020, the Cayman Islands were on the EU's list of non-cooperative jurisdictions for tax purposes. The EU's ECOFIN concluded that the Cayman Islands did not have appropriate measures in place relating to collective investment vehicles, and in response the Cayman Islands adopted reforms sufficient to address this deficiency. Bermuda was similarly placed on the EU's list of non-cooperative tax jurisdictions in March 2019, but removed from this list in May 2019 and added to the EU's list of cooperative

tax jurisdictions in February 2020. EU Finance Ministers signaled their approval of the economic substance regulations by placing Jersey and Guernsey on the EU's list of cooperative tax jurisdictions in March 2019, and the OECD has endorsed Jersey and Guernsey's domestic legal framework as being in line with the relevant standard. As the EU continues to monitor compliance by the jurisdictions in which we operate, further economic substance requirements imposed by these jurisdictions or a future addition of these jurisdictions to the EU's list of non-cooperative tax jurisdictions could have a material adverse effect on us.

We are required to obtain approval from our regulators before engaging in certain activities.

The laws, regulations, policies, voluntary codes of practice and interpretations applicable to us govern a variety of matters, including acquisitions and other activities we may engage in. As our primary lead regulator, the BMA requires that we obtain its prior consent, letter of no objection and/or approval before engaging in certain activities, including paying dividends on our common shares, entering into material acquisitions or issuing or repurchasing our common shares, and there can be no assurance that any regulatory approvals we may require will be obtained, either in a timely manner or at all. See "- Our strategy includes expansion of our business through acquisitions of, or investments in, other companies or new products and services, but we may not be able to achieve regulatory approval for such transactions or be able to achieve the anticipated cost savings, growth opportunities and other benefits anticipated from such transactions." Our regulators have the ability to compel us to, or restrict us from, taking certain actions entirely, such as actions that our regulators deem to constitute an unsafe or unsound banking practice. Any restrictions on our business placed by a regulator could have a negative impact on our ability to execute on our growth strategy. See "- Laws in certain jurisdictions in which we operate and our bye-laws could adversely affect the rights of our shareholders or prevent or delay a change in control." For example, if our capital levels are deemed insufficient by the BMA or otherwise, they may not approve our payment of a regular quarterly dividend.

Our ability to pay dividends to non-residents of Bermuda and the transfer of our common shares to non-residents of Bermuda could be impaired by Bermuda regulations.

A large number of our shareholders are resident outside of Bermuda, and our common shares are listed on the BSX and the NYSE. Bermuda regulations impacting non-Bermuda holders of our common shares are set by the Bermuda Controller of Foreign Exchange, whose current policy:

- permits the conversion of Bermuda Dollars for payment of dividends in foreign currency to shareholders who are non-residents of Bermuda for exchange control purposes, provided that all payments are processed through an authorized dealer, including, for this purpose, us; and
- permits the free transferability of equity securities of a Bermuda company for so long as such equity securities of such company are listed on an "appointed stock exchange" appointed by the Minister of Finance under section 2(9) of the Companies Act 1981.

However, if the Controller of Foreign Exchange were to change the foregoing policies, our ability to pay dividends in US Dollars to non-residents of Bermuda for exchange control purposes could be impaired. Furthermore each transfer of our common shares to or from non-residents of Bermuda for exchange control purposes could require specific approval by the Controller of Foreign Exchange. This could impact the liquidity of the market for our common shares, and the value of the common shares could be adversely affected.

If we are considered to be a passive foreign investment company, such characterization could result in adverse US federal income tax consequences to shareholders that are US investors.

Special adverse US federal income tax rules apply if a US shareholder holds shares of a company that is treated as a passive foreign investment company ("PFIC"), for any taxable year during which the US shareholder held such shares. A foreign corporation will be considered a PFIC for any taxable year in which (1) 75% or more of its gross income is passive income, or (2) 50% or more of the average fair market value of its assets is attributable to assets that produce or are held for the production of passive income (the "asset test"). Passive income for this purpose generally includes dividends, interest, royalties, rents, annuities and gains from assets that produce passive income. If a foreign corporation owns at least 25% (by value) of the stock of another corporation, the foreign corporation is treated, for purposes of the PFIC tests, as owning a proportionate share of the other corporation's assets and receiving its proportionate share of the other corporation's income.

Banks generally derive a substantial part of their income from assets that are interest-bearing or that otherwise could be considered passive under the PFIC rules. The US Internal Revenue Service (the "IRS"), has issued a notice, and has proposed regulations, that exclude from passive income any income derived in the active conduct of a banking business by a qualifying foreign bank.

Based upon the proportion of our income derived from activities that are "bona fide" banking activities for US federal income tax purposes, we believe that we were not a PFIC for the taxable year ended December 31, 2022 (the latest period for which the determination can be made) and, based further on our present regulatory status under local laws, the present nature of our activities, and the present composition of our assets and sources of income, we do not expect to be a PFIC for the current year or for any future years. However, PFIC status is a factual determination and there are uncertainties in the application of the relevant rules. Moreover, the IRS may issue guidance in the future with different requirements to be a qualified foreign bank, which we may not satisfy. Accordingly, there can be no assurances that we will not be a PFIC for any particular year. If we were a PFIC in any taxable year during which a US shareholder owns our common shares and the US shareholder does not make a "mark-to-market" election, as discussed under the heading "Certain Taxation Considerations - Material US Federal Income Tax Consequences - US shareholders - Passive Foreign Investment Company Considerations," or a special "purging election," we generally would continue to be treated as a PFIC with respect to such US shareholders in all succeeding years, regardless of whether we continue to meet the income or asset test discussed above. US shareholders are urged to consult their own tax advisers with respect to the tax consequences to them if we were to become a PFIC for any taxable year in which they own our common shares.

US withholding tax and information reporting requirements imposed under the Foreign Account Tax Compliance Act may apply.

As discussed below under the heading "Certain Taxation Considerations - Material US Federal Income Tax Consequences - Foreign Account Tax Compliance Act Withholding," pursuant to the Foreign Account Tax Compliance Act ("FATCA") enacted in 2010, a 30% withholding tax will be imposed on certain payments to certain non-US financial institutions that fail to comply with certain information-reporting, account identification, withholding, certification and other FATCA-related requirements in respect of their direct and indirect US shareholders and/or US account holders. To avoid becoming subject to FATCA withholding, we and other financial institutions may be required to report information to the IRS regarding the holders of our common shares and to withhold on a portion of payments under our common shares to certain holders that fail to comply with the relevant information reporting requirements (or that hold our common shares directly or indirectly through certain non-compliant intermediaries). However, under proposed Treasury regulations, such withholding will not apply to payments made before the date that is two years after the date on which final regulations defining the term "foreign passthru payment" are enacted. The rules for the implementation of this legislation have not yet been fully finalized, so it is impossible to determine at this time what impact, if any, this legislation will have on holders of the common shares.

Many countries, including Bermuda, have entered into agreements with the United States ("intergovernmental agreements" or "IGAs") to facilitate the implementation of FATCA. These IGAs modify the FATCA withholding regime described above. In December 2013, Bermuda entered into a Model 2 IGA with the United States pursuant to which Bermudian financial institutions are directed by the Bermudian authorities to register with the IRS and to enter into an agreement with the IRS to perform specified due diligence, reporting and withholding functions.

We, like many financial institutions, remain under considerable regulatory scrutiny regarding our ability to prevent and detect financial crime. The financial crime threats we face have continued to evolve, often in tandem with broader geopolitical, socioeconomic and technological shifts in our markets, leading to challenges such as managing conflicting laws and approaches to legal and regulatory regimes.

Financial crime risk evolved during the COVID-19 pandemic, notably with the manifestation of fraud risks linked to the economic slowdown and resulting deployment of government relief measures. The accelerated digitization of financial services has fostered significant changes to the payments ecosystem, including a multiplicity of providers and new payment mechanisms, not all of which are subject to the same level of regulatory scrutiny or regulations as financial institutions. Developments around digital assets and currencies, notably the role of cryptocurrencies, are increasing regulatory and enforcement focus on the financial crimes linked to these types of assets. While we continuously monitor for financial crime, there is a risk that we may unknowingly become a party to, associated with, or accused of being associated with, money laundering or violations of sanctions laws or regulations which could damage our reputation and could make us subject to fines, sanctions and/or legal enforcement. Any one of these outcomes could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

Risks Relating to the Common Shares

Purchases of our common shares under our share repurchase program may result in the price of our common shares being higher than the price that otherwise might have existed in the open market.

On February 13, 2023, the Board of Directors approved a new share repurchase program. Pursuant to the program, the Bank is authorized to repurchase up to 3.0 million common shares of the Bank through February 29, 2024. This was executed following the expiration of the previous share repurchase program of 2.0 million common shares approved by our Board of Directors on February 14, 2022. The timing, manner, price and amount of any repurchases will be determined by the Company, in its discretion, based upon the evaluation of economic and market conditions, stock price, available cash, applicable legal and regulatory requirements and other factors, and which may include purchases pursuant to Rule 10b5-1 of the Exchange Act. The program does not require the Company to repurchase any specific number of shares and there can be no assurance that any shares will be repurchased under the program. The program may be suspended, extended, modified or discontinued by the Company at any time. These activities may have had the effect of maintaining the market price of our common shares or retarding a decline in the market price of the common shares, and, as a result, the price of our common shares may have been higher than the price that otherwise might have existed in the open market.

We are a "foreign private issuer" under US securities law. Therefore, we are exempt from certain requirements applicable to US domestic registrants.

Although we are subject to the periodic reporting requirements of the Exchange Act, the periodic disclosure required of FPIs, including us, under the Exchange Act is different from periodic disclosure required of US domestic registrants. Therefore, there may be less publicly available information about us than is regularly published by or about US domestic registrants. We are exempt from certain other sections of the Exchange Act to which US domestic registrants are subject, including the requirement to provide our shareholders with information statements or proxy statements that comply with the Exchange Act. In addition, our insiders and large shareholders are not obligated to file reports under Section 16 of the Exchange Act. See "Implications of Being a Foreign Private Issuer."

As an FPI, we are also permitted by the NYSE to comply with Bermuda corporate governance practice in lieu of complying with certain NYSE corporate governance requirements. This means that we are not required to comply with NYSE requirements that:

- the board of directors consists of a majority of independent directors;
- independent directors meet in regularly scheduled executive sessions;
- the audit committee satisfy NYSE standards for director independence;
- the audit committee has a written charter addressing the committee's purpose and responsibilities;
- we have a nominating and corporate governance committee composed of independent directors with a written charter addressing the committee's purpose and responsibilities;
- we have a compensation committee composed of independent directors with a written charter addressing the committee's purpose and responsibilities;
- we establish corporate governance guidelines and a code of business conduct;
- our shareholders approve any equity compensation plans; and
- there be an annual performance evaluation of the nominating and corporate governance and compensation committees.

With the exception of having shareholders approve equity compensation plans, we have elected to comply with the NYSE requirements listed above, notwithstanding the exemptions available to us as an FPI. However, as ongoing compliance is not required by the NYSE, our shareholders may not have the same protections afforded to shareholders of companies that are subject to all of the NYSE corporate governance requirements.

We are a Bermuda company. Bermuda law differs from the laws in effect in the United States and might afford less protection to shareholders.

We are a Bermuda-based company incorporated under the laws of Bermuda. As a result, the rights of holders of our common shares will be governed by Bermuda law, including the Companies Act, the Butterfield Act and our bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions. In particular, under Bermuda law, the duties of directors and officers of a company are generally owed to the company only, and shareholders do not generally have rights to take action against directors or officers of the company. In addition, class actions and derivative actions are generally not available to shareholders under Bermuda law. The status of laws currently in place, and areas not currently governed, are subject to change. The interests of our shareholders could be adversely affected if significant regulations are added or deleted from Bermuda's existing statutory framework. For a summary of the existing legal framework in Bermuda, see Item 4.B. "Business Overview - Supervision and Regulation."

In addition, our business is based outside of the United States, a majority of our directors and officers reside outside of the United States and a majority of our assets and some or all of the assets of such persons are located outside of the United States. As a result, it may be difficult or impossible to effect service of process on us or our directors and officers in the United States or to enforce in the United States judgments obtained in the United States courts against us or those persons based on the civil liability provisions of the United States securities laws. Furthermore, it is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the United States, against us or our directors or officers under the securities laws of those jurisdictions or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

There are provisions in our bye-laws that may be used to delay or block a takeover attempt, which could discourage, delay or prevent a change in control of the Bank and could adversely impact the value of our common shares. For a detailed summary of the anti-takeover provisions in our bye-laws, see "Description of Share Capital" in our registration statement on Form F-1 filed with the SEC on February 13, 2017 with file number 333-216018.

Laws in certain jurisdictions in which we operate and our bye-laws could adversely affect the rights of our shareholders or prevent or delay a change in control.

Under the provisions of Bermuda's Banks and Deposit Companies Act 1999 ("BDCA"), the rights of our shareholders could be impaired if any such shareholder becomes a shareholder controller. If a shareholder controller fails to comply with the notice requirements in connection with a change in control under the BDCA or continues as such after being given notice of objection to its being a shareholder controller, the BMA may take the actions specified in the BDCA, including, among other things, revoking the relevant license of the Bank under the BDCA. For more information, see the summaries of relevant provisions of the BDCA regulations under Item 4.B. "Business Overview - Supervision and Regulation" and "Description of Share Capital" in our registration statement on Form F-1 filed with the SEC on February 13, 2017 with file number 333-216018.

Similarly, in Guernsey certain changes to the ownership structure of our Guernsey company (which is licensed by the Guernsey Financial Services Commission) may be considered to be a change of control requiring a declaration of "no objection" from the regulator, and in Jersey a change to the ownership or control of the Jersey regulated entity may also require regulatory approval.

In addition to these restrictions, the provisions of our bye-laws provide that a person who is not "Bermudian" (as such term is defined in the Companies Act) who is "interested" (as such term is defined in the bye-laws) in our shares which constitute more than 40% of all shares then issued and outstanding is not entitled to vote the shares which are in excess of such 40% interest at any general meeting without the prior written approval of the Minister of Finance. See also Item 4.B. "Business Overview - Supervision and Regulation."

Our common shares trade on more than one market and this may result in price variations; in addition, investors may not be able to easily move shares for trading between such markets.

Our common shares have traded on the BSX since 1971 and began trading on the NYSE in September 2016. Trading in our common shares on these markets takes place in different currencies (US Dollars on the NYSE and Bermuda Dollars on the BSX), and at different times (resulting from different time zones, different trading days and different public holidays in the United States and Bermuda). The trading prices of our common shares on these two markets may differ due to these and other factors. Any decrease in the price of our common shares on the BSX could cause a decrease in the trading price of our common shares on the NYSE, or vice versa. Investors could seek to sell or buy our common shares to take advantage of any price differences between the markets through a practice referred to as arbitrage. Any arbitrage activity could create unexpected volatility in both our share prices on one exchange, and the shares available for trading on the other exchange.

The value of the common shares may fluctuate significantly.

The value of our common shares may fluctuate significantly as a result of a large number of factors, including, in part, changes in our actual or forecasted operating results and the inability to fulfill the profit expectations of securities analysts, as well as the high volatility in the securities markets generally, and more particularly in shares of financial institutions. The current market price of our common shares may not be indicative of future market prices.

Other factors, besides our financial results, that may impact the price of our common shares include, but are not limited to:

- market expectations of the performance and capital adequacy of financial institutions in general;
- investor perception of the success and impact of our strategies;
- investor perception of our positions and risks, including risks associated with economic uncertainty in key markets in which we operate;
- a downgrade or review of our credit ratings;
- potential litigation or regulatory action involving us;
- announcements concerning financial problems or any investigations into the accounting practices of other financial institutions; and
- general market circumstances.

Holders of our common shares may not receive dividends.

The dividend policy described under Item 8.A. "Consolidated Statements and Other Financial Information - Dividend Policy" should not be construed as a dividend forecast. Our results of operations and financial condition are dependent on our performance. There can be no assurance that we will declare and pay dividends in the future. Any decision to declare and pay dividends in the future will be subject to the prior approval of the BMA and be made at the discretion of the Board. Such dividends shall be declared and paid by the Board only as permitted under applicable law. In determining the amount of any future dividends, factors the Board may take into account include: (1) our financial results; (2) our available cash, as well as anticipated cash requirements (including debt servicing); (3) our capital requirements, including the capital requirements of our subsidiaries; (4) our capital requirements to fund potential acquisitions; (5) contractual, legal, tax and regulatory restrictions on, and implications of, the declaration and payment of dividends by us to our shareholders or share repurchase activity; (6) general economic and business conditions; (7) restrictions applicable to the Bank and its subsidiaries under Bermuda and other applicable laws, regulations and policies, including the requirement to obtain a letter of no objection from the BMA for the payment of dividends on our common shares; and (8) any other factors that the Board may deem relevant. Therefore, there can be no assurance that we will declare or pay any dividends to holders of the common shares, or as to the amount of any such dividends.

Our ability to declare and pay dividends may also depend on the level of distributions, if any, received from our operating subsidiaries. Our operating subsidiaries may be precluded from declaring and paying dividends by various factors, such as their own financial condition, or restrictions applicable to us and our subsidiaries under Bermuda and other applicable laws, regulations and policies. The ability of certain of our subsidiaries to upstream funds has been increasingly restricted due to changes in the business and regulatory environments in the jurisdictions in which those subsidiaries operate. In addition, any change in tax treatment of dividends or interest received by us may reduce the level of yield received by our shareholders.

The issuance of additional shares in connection with future acquisitions, any share incentive or share option plan or otherwise may dilute all other shareholdings.

We may seek to raise capital to fund future acquisitions and other growth opportunities. We may, for these and other purposes, such as in connection with share incentive and share option plans, issue additional equity or convertible securities. Any issuance of additional shares, however, is subject to prior BMA approval, and we cannot guarantee that their approval will be obtained, either in a timely manner or at all. In the event that we are able to and do issue additional shares, existing shareholders could suffer dilution in their percentage ownership.

General Risk Factors

Information provided to us about clients and counterparties may not be accurate or complete.

In deciding whether to extend credit or enter into other transactions with clients and counterparties, we rely on information furnished by or on behalf of clients and

counterparties, including financial statements and other financial information. We also may rely on representations of clients and counterparties as to the accuracy and completeness of that information and, with respect to financial statements, on reports of independent auditors. Such information could turn out to be inaccurate, including as a result of fraud or misrepresentation on behalf of our clients, counterparties or other third parties, which would increase our credit risk and expose us to possible write-downs and losses.

We cannot be certain that our underwriting and operational controls will prevent or detect such fraud or that we will not experience fraud losses or incur costs or other losses related to such fraud. Our clients and counterparties may also experience fraud in their businesses which could adversely affect their ability to repay their loans or make use of our services.

During the periods reported in this annual report, we have not experienced any material losses, or had to write down collateral, as a result of fraud or misrepresentation, but we cannot be certain that the Bank will not experience any such losses or have to write down any such collateral in the future, which could have a material adverse impact on our results of operation and financial condition.

The appraisals and other valuation techniques we use in evaluating and monitoring loans secured by real property may not accurately describe the net value of the collateral that we can realize.

In considering whether to make a loan secured by real property, we generally require an appraisal of the property. However, an appraisal is only an estimate of the value of the property at the time the appraisal is made, and, as real estate values may change significantly in relatively short periods of time (especially in periods of heightened economic uncertainty and in rising interest rate environments), this estimate may not accurately describe the net value of the real property collateral after the loan is made. As a result, we may not be able to realize the full amount of any remaining indebtedness when we foreclose on and sell the relevant property. In addition, we rely on appraisals and other valuation techniques to establish the value of our OREO and to determine certain loan impairments. If any of these valuations are inaccurate, our consolidated financial statements may not reflect the correct value of our OREO, and our allowance for credit losses may not reflect accurate loan impairments. This could have an adverse effect on our business, financial condition or results of operations.

We may be alleged to have infringed upon intellectual property rights owned by others or may be unable to protect our own intellectual property.

Competitors or other third parties may allege that we, or consultants or other third parties retained or indemnified by us, infringe on their intellectual property rights. Even in instances where we believe that claims and allegations of intellectual property infringement against us are without merit, defending against such claims is time consuming and expensive and could result in the diversion of time and attention of our management and employees. In addition, although in some cases a third party may have agreed to indemnify us for such costs, such indemnifying party may refuse, or be unable, to uphold its contractual obligations.

Moreover, we rely on a variety of measures to protect our intellectual property and proprietary information, including copyrights, trademarks, and controls on access and distribution. These measures may not prevent misappropriation or infringement of our intellectual property or proprietary information and a resulting loss of competitive advantage. In any event, we may be required to litigate to protect our intellectual property and proprietary information from misappropriation or infringement by others, which is expensive and could cause a diversion of resources and may not be successful.

Our insurance coverage may not be adequate to cover all possible losses that we could suffer, and our insurance costs could increase in the future.

Our insurance policies do not cover all types of potential losses and liabilities and are subject to limits and excesses. There can be no assurance that our insurance will be sufficient to cover the full extent of all losses or liabilities for which we are ultimately responsible, which could result in losses being incurred by the Bank. Additionally, we cannot guarantee that we will be able to renew our current insurance policies on favorable terms, or at all.

Changes in accounting policies and practices may be adopted by applicable regulatory agencies or other authoritative bodies, which could materially impact our financial statements.

Our accounting policies and methods are fundamental to how we record and report our financial condition and results of operations. From time to time, applicable regulatory agencies and other authoritative bodies change the financial accounting and reporting standards that govern the preparation of our financial statements. These changes can be difficult to predict and can materially impact how we record and report our financial condition and results of operations.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Corporate Information

We are a company incorporated under the laws of Bermuda, incorporated on October 22, 1904, pursuant to The N.T. Butterfield & Son Bank Act, 1904 (the "Butterfield Act"). We are registered with the Registrar of Companies in Bermuda under registration number 2106. Our registered office and principal executive offices are located at 65 Front Street, Hamilton, HM 12, Bermuda. Our agent for service of process in the United States is C T Corporation System, 28 Liberty Street, New York, New York 10005. Our telephone number is (441) 295 1111. We maintain a website at www.butterfieldgroup.com. Neither this website nor the information on or accessible through this website is included or incorporated in, or is a part of, this report.

The SEC maintains an internet site at <https://www.sec.gov> that contains reports, information statements, and other information regarding issuers that file electronically with the SEC.

Our History

The origin of The Bank of N.T. Butterfield & Son Limited dates back to the founding of the trading firm of Nathaniel Butterfield circa 1784. In 1858, our company was established as a bank in Bermuda and has been instrumental to the functioning of the local economy ever since. The Bank was later incorporated under a special act of the local Parliament in 1904. In the 1960s, as international businesses began contributing substantially to Bermuda's economy, we developed services to work to meet their needs. In 1967, we opened offices in the Cayman Islands and by the 1980s had expanded our operations to include retail banking, investment management, and fund administration. In 1973, we opened our Guernsey office in order to provide customers with access to the Pound Sterling currency after Bermuda's departure from the British Sterling zone. In addition to being Bermuda's first bank, we opened the first ATMs in Bermuda in the 1980s and launched Bermuda's first internet banking service in 2001. In 1971, we listed our common shares on the BSX ("Bermuda Stock Exchange") under the ticker symbol "NTB.BH". In 2016, we listed our common shares on the NYSE under the ticker symbol "NTB".

In 2008 and 2009, as a result of the global financial crisis, we realized losses attributable primarily to US non-agency mortgage backed securities in our investment portfolio, as well as write-downs on local market hospitality loans. To raise capital to offset these losses, the Bank executed a \$200 million preference share offering in June 2009. In 2009 and 2010, we implemented a comprehensive restructuring plan for the Company: we hired a new management team, de-risked our balance sheet, and raised \$550 million of common equity from a group of investors as well as existing shareholders.

Since our restructuring, we have pursued a strategy to focus on our core business in banking and wealth management. We have executed upon our strategy by streamlining the Company's operations through exiting non-core markets, repositioning our balance sheet, investing in efficiency initiatives, and continuing to invest in our core business lines to grow both organically and through acquisitions. By following this strategy, we have improved our financial results and have been able to initiate a progressive capital return policy for investors. The following are the most recent key steps in executing our strategy:

- In October 2017, we entered into an agreement to acquire Deutsche Bank AG's ("Deutsche Bank's") Global Trust Solutions ("GTS") business, excluding its US operations, for net cash payments of \$24.7 million. Upon completion of the transaction, Butterfield took over the ongoing management and administration of the GTS portfolio, comprising approximately 1,000 trust structures for some 900 private clients in Guernsey, Switzerland, the Cayman Islands and Singapore. As part of the transaction, we also acquired a service company in Mauritius to provide operations and support services to our trust businesses. This transaction was completed in March 2018.
- In February 2018, we entered into an agreement to acquire Deutsche Bank's banking and custody business in the Cayman Islands, Jersey and Guernsey, which provides services primarily to financial intermediaries and corporate clients. The Bank began to onboard certain customer deposits relating to the acquisition in 2018, and this onboarding activity was completed in the first half of 2019.
- In May 2018, we issued \$75 million of 5.25% Fixed to Floating Rate Subordinated Notes due in 2028 to repay a portion of our outstanding indebtedness and for other general corporate purposes.
- In July 2019, we completed the £160.7 million (\$201.1 million) acquisition of ABN AMRO (Channel Islands) Limited ("ABN AMRO (Channel Islands)"), which provides banking, investment management and custody products to three distinct client groups, including trusts, private clients, and funds.
- In June 2020, we issued \$100 million of 5.25% Fixed to Floating Rate Subordinated Notes due in 2030 for general corporate purposes, including the repayment of a portion of our previously outstanding debt.
- In September 2022, we entered into an agreement to acquire the Credit Suisse global trust businesses operating in Singapore, Guernsey and The Bahamas. This transaction is expected to close in 2023.

B. Business Overview

Overview

We are a full service bank and wealth manager headquartered in Hamilton, Bermuda. We operate our business through three geographic segments: Bermuda, the Cayman Islands, and the Channel Islands and the UK. We offer banking services, comprising of retail, private and corporate banking, treasury services, and wealth management, which consists of investment management, advisory and brokerage services, trust, estate, and company management in both our Bermuda and Cayman Islands segments, as well as custody services in our Bermuda segment. The Channel Islands and the UK segment include the jurisdictions of Guernsey and Jersey (Channel Islands), and the UK. In the Channel Islands, a broad range of services are provided to private clients and financial intermediaries including private banking and treasury services, internet banking, wealth management and fiduciary services. In 2021, the Channel Islands entered the local mortgage market offering various products to local residents. The UK jurisdiction provides mortgage services for high-value residential properties. We also have operations in the jurisdictions of The Bahamas, Canada, Mauritius, Singapore and Switzerland, which we include in our Other segment.

For the year ended December 31, 2022, we generated \$549.3 million in net revenue after provision for credit losses and other gains/losses ("net revenue"). Our total net revenue, before inter-segment eliminations, by each of our three geographic segments and our non-reportable "Other" segment for the years ended December 31, 2022, 2021 and 2020 are as follows:

In millions of \$	For the year ended		
	2022	2021	2020
Net Revenue			
Bermuda	\$ 248.6	\$ 233.7	\$ 238.0
Cayman Islands	\$ 182.0	\$ 150.7	\$ 145.6
Channel Islands and the UK	\$ 107.1	\$ 105.2	\$ 101.9
Other	\$ 29.5	\$ 27.6	\$ 14.4

As at December 31, 2022, we had \$14.3 billion in total assets, \$5.1 billion in net loans, \$13.0 billion in total deposits (55% USD deposits, 19% USD-pegged deposits), \$106.2 billion and \$32.2 billion of trust and custody businesses assets under administration, respectively, and \$5.0 billion of assets under management.

In our Bermuda and Cayman Islands segments, our bank provides a full range of retail and corporate banking services to individuals, local businesses, captive insurers, reinsurance companies, trust companies, and hedge funds. The key products we offer include personal and business deposit services, residential and commercial mortgages, small and medium-sized enterprise and corporate loans, credit and debit cards, merchant acquiring, mobile and internet banking, and cash management.

In our Channel Islands and UK segment, our bank provides a broad range of services to private clients and financial institutions including private banking, corporate banking and treasury services, internet banking, wealth management, mortgage lending and fiduciary services. In 2021, the segment entered the local mortgage market offering various products to local residents. The UK jurisdiction provides mortgages for high-value residential properties.

In all of our segments, we offer wealth management to high net worth and ultra-high net worth individuals, family offices, and institutional and corporate clients. Our wealth management platform has three lines of business: trust, private banking, and asset management.

The trust business line, which utilizes specialists in each of our geographic areas, responds to client needs in estate and succession planning, administration of complex asset holdings, and efficient coordination of family affairs. In addition, the business provides pension and employee benefits services for multinational corporations, as well as services that involve administration of and fiduciary responsibility for customized trust structures holding a wide range of asset types including financial assets, property, business assets and art.

Our private banking business line offers access to a suite of services, targeted toward high net worth and ultra-high net worth individuals, trusts, and family offices, that can be customized to each client's needs and preferences and delivered as part of a coordinated strategy by a dedicated private banker. We provide clients in our Bermuda, Cayman Islands, and Channel Islands and the UK segments with an integrated model that combines traditional wealth management with banking, lending, cash management, foreign exchange services, custody and access to asset management and trust professionals within Butterfield. We also provide our clients with access to their account information through the use of internet and mobile banking.

Our asset management business line provides a broad range of portfolio management services to institutional and private clients. Our target client base includes institutions such as pension funds and captive insurance companies with investable assets over \$10 million and private clients such as high net worth and ultra-high net worth individuals, families, and trusts with investable assets over \$1 million. Our principal services include discretionary investment management, managed portfolio services, money market, and mutual fund offerings. We also offer advisory and self-directed brokerage options. Over 90% of the business's discretionary investment mandates call for balanced growth to conservative allocations. We focus on delivery of reasonable appreciation with an emphasis on capital preservation. The Bank relies on third parties to provide research and investment management expertise, while our own services are concentrated on portfolio construction and managing client relationships. We also provide customized reporting to meet specific needs of our major clients.

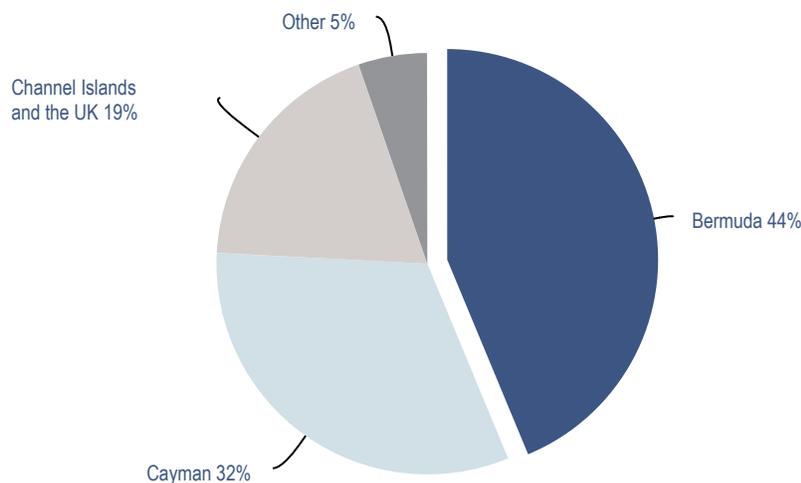
From 2017 to 2022, our GAAP net income to common shareholders and our core net income to common shareholders ("Core Net Income to Common")⁽¹⁾ had compound annual growth rates ("CAGR") of 5.7% and 5.2%, respectively. Our earnings generation has allowed us to build capital to return to shareholders and invest strategically, both organically and through acquisitions, to further enhance the growth prospects of our Company. We aim to continue to build excess capital in the future, which we can redeploy into growing our business and return to shareholders.

⁽¹⁾ Core Net Income to Common is a non-GAAP financial measure that is calculated by adjusting net income for income or expense items which management considers not to be representative of the ongoing operations of our business and preference share dividends, guarantee fees and premiums paid on preference share buybacks and redemptions. For a reconciliation of Core Net Income to Common to GAAP net income to common, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".

Our Markets

The charts below provide the geographic distribution of our Net Revenue for the year ended December 31, 2022.

Segment Distribution of Net Revenue



2022 Net Revenue: \$549.3 million

The Bermuda and Cayman Islands banking markets have historically been characterized by a limited number of participants and significant barriers to entry. In addition, these markets provide us with access to several attractive customer bases: in retail banking, we serve local residents and businesses; in corporate banking, we serve captive insurers, hedge funds, middle-market reinsurers, and other corporates; and in wealth management, we serve private trust clients and high net worth and ultra-high net worth individuals and families.

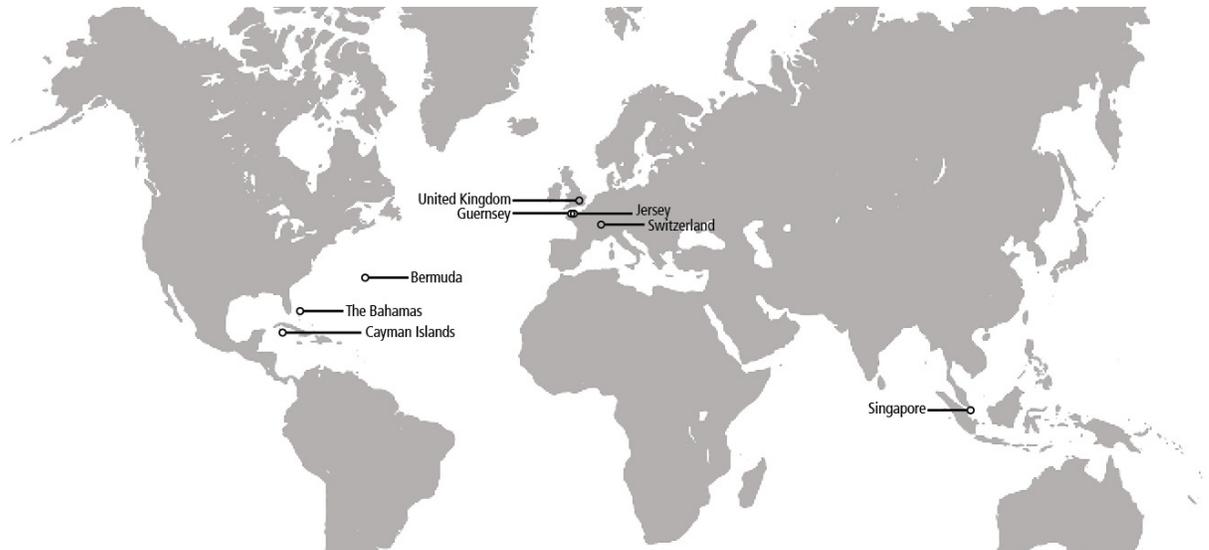
The international trust market is primarily concentrated in select jurisdictions, including Bermuda, the Cayman Islands, Guernsey, Jersey, Hong Kong, Singapore, and Switzerland. The leading international trust law firms serve as key introducers of clients to Butterfield and are the primary source of new business. Trust clients often hold assets that are international in nature, and as a result, performance of trust businesses is expected to have limited correlation with the performance of the domestic economies where clients are served.

The private banking market in Bermuda, the Cayman Islands, and Guernsey is composed largely of resident high net worth and ultra-high net worth individuals meeting minimum deposit and/or loan thresholds. Clients are introduced to the private bank through Butterfield's retail banking operation upon reaching the appropriate deposit or loan threshold, Butterfield's trust and asset management arms, as well as through external introducers. Although locally based, private banking clients often hold international assets, and as a result, business performance is not necessarily correlated to the domestic economies where clients are served.

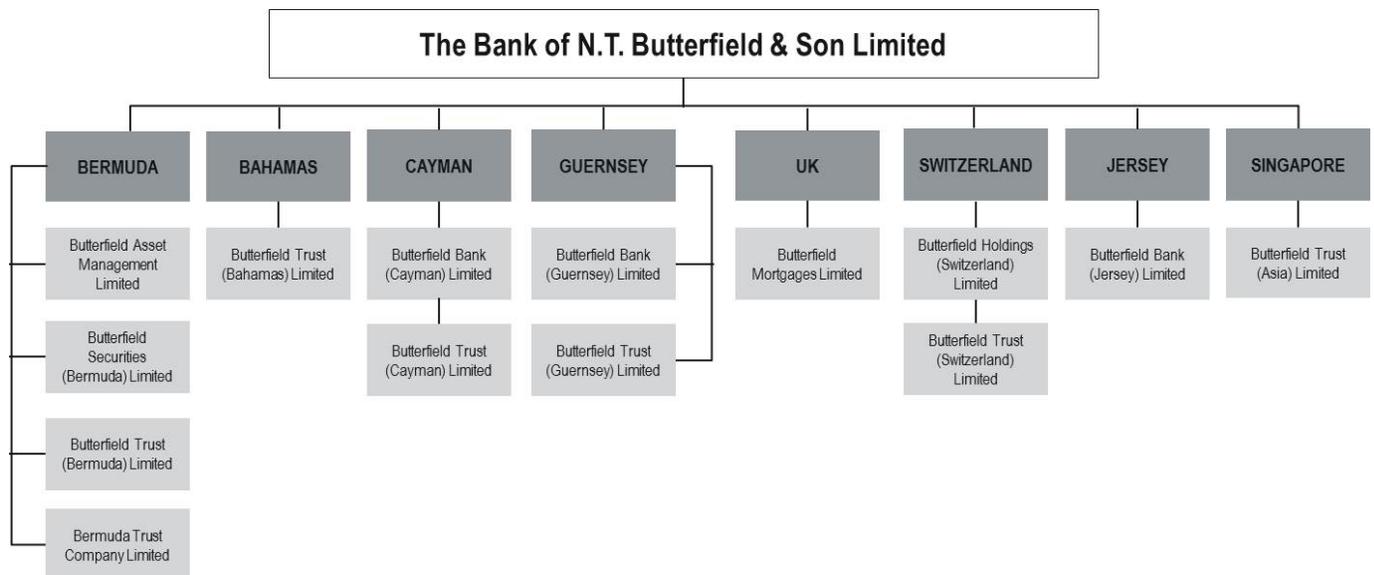
Our asset management business line operates in Bermuda, the Cayman Islands, and Guernsey. As at December 31, 2022, 71% of our AUM was in Bermuda, 16% was in the Cayman Islands, and 13% was in Guernsey. In Bermuda and the Cayman Islands, a majority of our institutional and private clients are domestic from a domicile perspective while a majority of our clients in Guernsey are tied to our trust business and are international in nature.

Our International Network and Group Structure

The following map presents the several geographic regions in which our business operates. Business support centers in Canada and Mauritius are not shown.



The following chart presents our corporate structure, indicating our principal regulated subsidiaries as at December 31, 2022. All of the subsidiaries listed below are wholly owned by the Bank.



Bermuda

The Bank itself is licensed in Bermuda to provide banking and custody services. Through Butterfield Asset Management Limited and Butterfield Securities (Bermuda) Limited, it is licensed and provides investment services and, through Butterfield Trust (Bermuda) Limited and Bermuda Trust Company Limited, it is licensed and provides corporate trustee, fiduciary and corporate administration services. Butterfield Securities (Bermuda) Limited also provides investment advisory and listing sponsor services.

The Bahamas

Butterfield Trust (Bahamas) Limited provides trust and fiduciary services.

Cayman Islands

Butterfield Bank (Cayman) Limited provides banking services and Butterfield Trust (Cayman) Limited provides trustee, fiduciary and corporate administration services.

Guernsey

Butterfield Bank (Guernsey) Limited provides private banking, corporate banking, custody services and mortgage lending. Butterfield Trust (Guernsey) Limited provides trustee and fiduciary services.

United Kingdom

Butterfield Mortgages Limited provides residential property lending services.

Switzerland

Butterfield Holdings (Switzerland) Limited provides investment services and Butterfield Trust (Switzerland) Limited provides trust and fiduciary services.

Jersey

Butterfield Bank (Jersey) Limited provides deposit-taking, mortgage lending, investment business and custody services.

Singapore

Butterfield Trust (Asia) Limited provides trust and fiduciary services.

Competition

The financial services industry and each of the markets in which we operate are competitive. We face strong competition in gathering deposits, making loans and obtaining client assets for management. We compete, both domestically and internationally, with globally oriented asset managers, retail and commercial banks, investment banking firms, brokerage firms and other investment service firms. Due to the trend toward consolidation in the global financial services industry, our larger competitors tend to have broader ranges of product and service offerings, greater access to capital, and greater efficiency. Larger financial institutions may also have greater ability to leverage increasing regulatory requirements and investment in technology platforms. We also face competition from non-banking financial institutions. These institutions have the ability to offer services previously limited to commercial banks. In addition, non-banking financial institutions are not subject to the same regulatory restrictions as banks, and can often operate with greater flexibility and lower cost structures.

The Bermuda banking industry currently consists of four licensed banks and one licensed deposit-taking institution. These include one subsidiary of an international bank, HSBC, and three domestic institutions: Butterfield, Bermuda Commercial Bank and Clarien Bank. In the Cayman Islands, the Bank is one of six Class 'A' full service retail banks licensed to conduct business with domestic and international clients. There are also 3 non-retail Category 'A' banks and 83 limited service Category 'B' banks according to CIMA. In the Channel Islands, Guernsey has 20 licensed banks and Jersey has 20, the majority of which are subsidiaries of global banking groups and brands such as Barclays, RBS, Lloyds, Credit Suisse, Investec, Royal Bank of Canada and Northern Trust. In certain interest rate environments, additional significant competition for deposits may be expected to arise from corporate and government debt securities and money market mutual funds. We view HSBC in Bermuda and Scotia Bank and CIBC FirstCaribbean in the Cayman Islands as our most significant competitors in those markets.

In our wealth management business line, we face competition from local competitors, as well as much larger financial institutions, including financial institutions that are not based in the markets in which we operate. Revenues from the trust and wealth management business depend in large part on the level of assets under management, and larger international banks may have higher levels of assets under management.

In our trust business line, we face competition primarily from other specialized trust service providers. There are many trust companies in the main international financial centers, and many of our competitors in this sector offer fund administration and corporate services alongside private client fiduciary services.

Competition for deposits is also affected by the ease with which customers can transfer deposits from one institution to another. Our cost of funds fluctuates with market interest rates and may be affected by higher rates being offered by other financial institutions. We believe that our most direct competition for deposits comes from international and domestic financial services firms that target the same customers as the Bank.

Deposits

We are a deposit-led institution with leading market shares in Bermuda and the Cayman Islands¹, and a small but growing market share in the Channel Islands. We strive to maintain deposit growth and to maintain a strong liquidity profile through a significant excess of deposits over loans through market cycles.

Our deposits are generated principally by our banking business line, which offers retail and corporate checking, savings, and term deposits through our segments in Bermuda, the Cayman Islands and the Channel Islands. In addition, wealth management, through its private banking business line, also provides deposit services to high net worth and ultra-high net worth clients in those same geographic segments. As at December 31, 2022, our Bermuda, Cayman Islands and Channel Islands and the UK segments contributed \$4.5 billion, \$4.3 billion and \$4.2 billion, respectively, to our total deposit base.

Total deposits as at December 31, 2022 were \$13.0 billion, down 6.3% over total deposits as at December 31, 2021. Demand deposits, which include checking, savings and call accounts, totaled \$9.9 billion, or 76.1% of our total deposits, as at December 31, 2022, compared to \$10.9 billion, or 78.8%, as at December 31, 2021. Term deposits totaled \$3.1 billion as at December 31, 2022 compared to \$2.9 billion as at December 31, 2021. The cost of funds on total deposits increased from 11 basis points in 2021 to 34 basis points in 2022. The decrease in deposit balances was driven by clients investing their funds and the strengthening of the US dollar. Cost of funds increased primarily due to the active repricing of deposits, particularly in the more competitive Channel Islands markets, driven by increased market interest rates.

Lending

We offer a broad set of lending products and services including residential mortgage lending, automobile lending, credit cards, consumer financing, and overdraft facilities to our retail customers, and commercial real estate lending, commercial and industrial loans, and overdraft facilities to our commercial and corporate customers. These offerings are provided to our retail, commercial, and private banking clients in our key jurisdictions of Bermuda and the Cayman Islands. We also offer residential mortgage lending through our banking business in the Channel Islands and to our high net worth and ultra-high net worth clients in the UK. Our loan portfolio, net of allowance for credit losses, stood at \$5.1 billion as at December 31, 2022 compared to \$5.2 billion as at December 31, 2021. The loan portfolio represented 35.6% of total assets as at December 31, 2022, and loans, net of allowance for credit losses, as a percentage of total deposits were 39.2%. The effective yield on total loans for the year ended December 31, 2022 was 5.91%, compared to 4.00% for the year ended December 31, 2021.

Residential Mortgage Lending

The residential mortgage portfolio comprises mortgages to clients with whom we are seeking to establish (or already have) a comprehensive financial services relationship. It includes mortgages to individuals and corporate loans secured by way of first ranking charges over the residential property to which each specific loan relates, generally on terms which allow for the repossession and sale of the property if the borrower fails to comply with the terms of the loan. As at December 31, 2022, residential mortgages totaled \$3.6 billion, accounting for approximately 69.7% of the Group's total gross loan portfolio with \$40.4 million of residential mortgage non-accrual loans representing 64.1% of total non-accrual loans in the loan portfolio.

¹ Based on interpretive data provided by the BMA and CIMA respectively.

Consumer Lending

We provide loans, as part of our normal banking business, in respect of automobile financing, consumer financing, credit cards and overdraft facilities to retail and private banking clients in the jurisdictions in which we operate. As at December 31, 2022, non-residential loans to consumers totaled \$200.5 million, accounting for approximately 3.9% of the Group's total gross loan portfolio and approximately 1.5% of total non-accrual loans in the Group's loan portfolio.

Commercial Real Estate Lending

Commercial real estate loans are offered to real estate investors, developers and builders domiciled primarily in Bermuda, the Cayman Islands, Guernsey and the UK. To manage the Group's credit exposure on such loans, the principal collateral is real estate held for commercial purposes and is supported by a registered mortgage. Cash flows from the properties, primarily from rental income, are generally supported by long-term leases.

As at December 31, 2022, our commercial real estate loan portfolio totaled \$627.3 million, accounting for approximately 12.2% of the Group's total gross loan portfolio with \$3.2 million of commercial real estate non-accrual loans representing 5.0% of total non-accrual loans in the loan portfolio.

Our commercial real estate loan portfolio is broken down into two categories: commercial mortgage and construction. As at December 31, 2022, commercial mortgages totaled \$619.9 million, and construction loans totaled \$7.5 million, accounting for approximately 98.8% and 1.2% of our commercial real estate loan portfolio, respectively.

Other Commercial Lending

The commercial and industrial loan portfolio includes loans and overdraft facilities advanced primarily to corporations and small and medium-sized entities, which are generally not collateralized by real estate and where loan repayments are expected to flow from the operation of the underlying businesses. As at December 31, 2022, the Group's commercial loan portfolio, excluding loans to governments, totaled \$441.9 million, accounting for approximately 8.6% of the Group's total gross loan portfolio and the Group's loans to governments totaled \$281.5 million, accounting for approximately 5.5% of our total gross loan portfolio. There was \$18.5 million of other commercial non-accrual loans representing approximately 29.3% of total non-accrual loans in the loan portfolio.

Investments

Given the large customer deposit base commanded in our Bermuda, Cayman Islands and Channel Islands operations, and the relatively low volume of lending demand from our customer base, our investment strategy is more important than may be the case for most financial institutions. In recognition of this, we maintain what we believe to be a conservative approach to investments, requiring the purchase of mainly fixed-rate investments in order to manage interest rate risk. Our investment portfolio comprises mainly securities issued or guaranteed by the US government or federal agencies. The securities in which we invest are limited generally to securities that are considered investment grade (i.e., "BBB" and higher by S&P's Financial Services LLC or an equivalent credit rating). Effective April 1, 2013, we entered into an agreement with Alumina pursuant to which Alumina provides investment advisory services to us in respect of our US Treasury and agency portfolio.

As at December 31, 2022, the Group held \$5.7 billion in investments, representing approximately 40.0% of total assets.

Cash and Liquidity Management

We operate across multiple currency jurisdictions with multi-currency products. In our deposit taking jurisdictions—Bermuda, the Cayman Islands, Guernsey and Jersey—there are currently no dedicated central banks, and no pre-funded deposit insurance scheme infrastructures (such as the Federal Deposit Insurance Corporation in the United States), with the exception of Bermuda, where a pre-funded deposit insurance scheme has been implemented, and as described below in "Supervision and Regulation" and Item 3.D. "Risk Factors - Risks Relating to the Markets in Which We Operate - Certain jurisdictions in which we operate, including Bermuda, Guernsey and Jersey, have a Deposit Insurance Scheme or Deposit Compensation Scheme and we incur ongoing costs as a result". In addition, we do not have access to borrowing or deposit facilities with the US Federal Reserve or the European Central Bank; therefore, we conservatively manage client deposit balances and the liquidity risk profile of our balance sheets. This involves the retention of significant cash or cash equivalent balances, management of intra-bank counterparty exposure and management of a significant short-dated Canadian, UK and US Treasury Bill portfolio. As at December 31, 2022, the cash and cash equivalents of \$2.1 billion was composed primarily of \$1.7 billion in interest earning cash equivalents, which are investments with a less than 90-day duration. The remaining amounts were comprised of non-interest bearing and interest bearing deposits of \$0.1 billion and \$0.3 billion, respectively.

Foreign Exchange Services

We provide foreign exchange services in the normal course of business in all banking jurisdictions. The major contributors to foreign exchange revenues are Bermuda and the Cayman Islands, accounting for 81% of our foreign exchange revenue for the year ended December 31, 2022. We do not maintain a proprietary trading book. Foreign exchange commission income is generated from client-driven transactions and totaled \$47.8 million during the year ended December 31, 2022.

Administration Services

Through our wholly-owned trust subsidiaries, we provide custody administration and settlement services to a wide range of internal and external investment clients dealing in global markets. Our custody service currently offers custody settlement and safekeeping services in 39 markets globally, including major markets and smaller, less-developed markets, with principal markets covered being the United States, Canada, Europe and Asia.

Our custody service offers safekeeping services for physical and book-entry assets. Custody for listed securities is conducted through BNYM. Hedge funds, mutual funds and exchange traded funds are held by BBH. Trading in investment transactions is settled via our global sub-custodians, BNYM and BBH. Custody services are offered from our Bermuda, Cayman Islands and Channel Islands segments and complement core wealth management services offered by other parts of the Group, and we currently anticipate this business to grow in line with our wealth management business. Clients of our custody service include a wide range of investment funds and other investment vehicles, corporations and trusts whose related banking requirements are provided by the Bank. As such, the custody client base, in addition to delivering a fee based income, also provides cash balances and foreign exchange transaction flows.

Custody fees are earned based on the value of Assets Under Custody, which are subject to a minimum levels for smaller, less complex portfolios. In addition to these fees, custody clients are charged banking transaction fees based on account activity.

Information Technology

We devote significant resources to maintaining stable, reliable, efficient and scalable information technology systems. We work with our third-party vendors to monitor and maximize the efficiency of our use of their applications. We use integrated systems to originate and process loans and deposit accounts, which reduces processing time,

improves customer experience and reduces costs. Most customer records are maintained digitally. We are also currently executing several initiatives to enhance our online and mobile banking services to further improve the overall client experience.

Currently, our information technology is operationally divided into two platforms: (i) Bermuda and Cayman and (ii) Channel Islands and the UK and Group Trust. In our Bermuda and Cayman operations, we operate on a single industry standard banking technology platform utilizing a predominantly outsourced and supported model hosted across paired data centers in Canada. In our Channel Islands and UK and Group Trust operations, core services and applications are hosted across both Guernsey and Jersey data centers.

Protecting our systems to ensure the safety of our customers' information is critical to our business. We use multiple layers of protection to control access and reduce risk, including conducting access testing and regular vulnerability scanning on our platforms, systems and applications to reduce the risk that any attacks are successful. To protect against disasters, we have a Business Continuity Management framework and IT Disaster Recovery plans. For more information, see Item 3.D. "Risk Factors - Risks Relating to Risk Oversight and Internal Controls".

Marketing

Through our Marketing & Communications department, we engage select advertising, branding and promotional companies on an as-needed basis and provide business development and sales support for businesses in all jurisdictions. In support of our banking businesses, we broadly market our products and services through print, broadcast, web and social media advertising in the major markets in which we operate. Trust and fiduciary services are marketed primarily to intermediaries through representative attendance at and sponsorship of industry conferences and through print advertising in international trade journals.

Intellectual Property

In the highly competitive banking industry in which we operate, intellectual property is important to the success of our business. We own a variety of trademarks, service marks, trade names and logos and spend time and resources maintaining this intellectual property portfolio. We control access to our intellectual property through license agreements, confidentiality procedures, non-disclosure agreements with third parties, employment agreements and other contractual rights to protect our intellectual property. For more information, see Item 3.D. "Risk Factors - Risks Relating to Our Strategy, Brand, Portfolio and Other Aspects of Our Business".

Supervision and Regulation

Bermuda

The Bank is subject to regulation and supervision by the Bermuda Monetary Authority (the "BMA") under:

- the Bermuda Monetary Authority Act 1969;
- the Banks and Deposit Companies Act 1999 (the "BDCA");
- the Trusts (Regulation of Trust Business) Act 2001;
- the Investment Business Act 2003;
- the Exchange Control Regulations 1973;
- the Corporate Services Provider Business Act 2012; and
- any applicable code of practice or guidance notes that may be published by the BMA from time to time.

The Bank is also subject to regulation by the Minister of Finance in Bermuda under the Companies Act 1981, the Banking (Special Resolution Regime) Act 2016 and the Economic Substance Act 2018 and regulations promulgated thereunder (including applicable guidance notes published by the Registrar of Companies from time to time). It is also subject to the Deposit Insurance Act 2011 and the Deposit Insurance Rules 2016.

Supervision and Monitoring by the BMA

Our activities are regulated by the BMA and our ability to engage in certain activities is subject to prior approval by the BMA. One of the principal objectives of the BMA is to supervise, regulate and inspect financial institutions which operate in or from within Bermuda and further to promote the financial stability and soundness of such financial institutions. The supervision is primarily for the benefit and protection of the Bank's clients and not for the benefit of our investors. The BMA is also responsible for managing and regulating transactions in foreign currency or gold.

In addition to conducting on-site reviews, the BMA utilizes a comprehensive quarterly statistical return system that enables off-site monitoring of institutions licensed under the BDCA. The statistical system, which follows the standards imposed on banks in the UK by the Financial Conduct Authority and is consistent with Basel Committee Standards, provides the BMA with a detailed breakdown of the Bank's balance sheet and profit-and-loss accounts on both a consolidated and unconsolidated basis. This information enables the BMA to monitor the soundness of the Bank's financial position and ensure that it meets certain capital requirements.

As the Bank's supervisory authority in Bermuda, the BMA is responsible for the consolidated supervision of our worldwide operations. There are also host regulatory bodies performing a similar function to that of the BMA in all major locations in which the Bank operates regulated activities. Many of these local authorities require detailed reporting on the activities of the Bank's subsidiaries located in their jurisdictions. As part of its oversight process, the BMA receives copies of each of these reports on a regular basis and liaises with the regulatory authorities in the respective locations.

From time to time, in the ordinary course of business, the Bank enters into agreements with the BMA under which the Bank agrees to achieve or maintain certain levels of capital and to obtain the BMA's prior approval or letter of no objection to take certain corporate actions. Certain actions that may not be taken without prior BMA approval include: (1) creating or increasing the authorized amount of, or issuing any class of shares; and (2) entering into a material acquisition.

Under the market disclosure requirements (referred to as Pillar III disclosures) applicable under the Basel III Accord ("Basel III"), the Bank is required to publish information about the risks to which it is exposed. Effective as of January 1, 2015, the BMA adopted capital and liquidity regulatory requirements consistent with Basel III, a framework released by the BCBS. Basel III aims to raise the quality, consistency and transparency of the capital base, limit the build-up of excess leverage and increase capital requirements for the banking sector.

The Bank is subject to the following requirements:

- CET1 as the primary and predominant form of regulatory capital, with a requirement of CET1 of at least 7.0% of RWA, inclusive of a minimum CET1 capital adequacy ratio of 4.5% plus a capital conservation buffer of 2.5%, but excluding the D-SIB surcharge described below. The BMA allowed Bermuda banks to make the one-time irrevocable election to exclude other comprehensive income on their AFS portfolios from CET1;

- a Tier 1 capital requirement of at least 8.5% of RWA, inclusive of a minimum Tier 1 ratio of 6% and the capital conservation buffer of 2.5% but excluding the D-SIB surcharge described below;
- a total capital requirement of at least 10.5% of RWA, inclusive of a minimum total capital ratio of 8% and the capital conservation buffer of 2.5% but excluding the D-SIB surcharge described below;
- the Bank is considered to be a D-SIB and is subject to a 3% surcharge composed of CET1-eligible capital implemented by the BMA effective September 30, 2015. This is based upon its assessment of the extent to which the Bank (individually and collectively with the other Bermuda banks) poses a degree of material systemic risk to the economy of Bermuda due to its role in deposit taking, corporate lending, payment systems and other core economic functions;
- the inclusion of a countercyclical buffer to be introduced when macro-economic indicators provide an assessment of excessive credit or other pressures building in the banking sector, potentially increasing the Bank's required capital buffer by up to 2.5%;
- the introduction of a 5% leverage ratio as calculated in accordance with Basel III;
- an LCR with a minimum requirement of 100%; and
- a NSFR with a minimum requirement of 100%.

The minimum capital ratio requirements set forth above do not reflect additional Pillar II add-on requirements that the BMA may impose upon the Group as a prudential measure from time to time. As the Group's capital requirements remain under continuous review by the BMA pursuant to its prudential supervision, the Group cannot guarantee that the BMA will not seek higher total capital ratio requirements from time to time.

The Bank may from time to time also be subject to additional regulatory requirements imposed by the BMA in its role as Bermuda's main prudential regulator such as the Outsourcing Guidance Notes for Relevant Legal Entities, including banks, corporate service providers, trust companies, investment businesses and fund administrators, which require (among other things) these entities to demonstrate good risk management, and to notify the BMA of any new material outsourcing arrangements.

Effective February 29, 2020, the Bermuda Banking Association Code of Ethical Conduct was promulgated. This is a voluntary code that the Bank subscribes to. It sets out a number of guiding principles and commitments in the Bermuda banking industry for customers. The code complements the BDCA, and the code of conduct promulgated under the BDCA, in promoting best practice and encouraging higher standards for the benefit of customers through competition and market forces.

Bermuda Monetary Authority Act 1969

The Bermuda Monetary Authority Act 1969 established the BMA as a statutory corporate body responsible for, among other things, supervising, regulating and inspecting any financial institution which operates in or from within Bermuda (which includes the Bank). Specific areas of financial regulation, such as the banking industry, are also the subject of separate, specific legislation (some of which is discussed below), but this specific legislation is nevertheless administered by the BMA in its supervisory capacity. In addition to its supervisory functions, both under the Bermuda Monetary Authority Act 1969 and the specific legislation discussed below, the BMA is empowered to assist foreign regulatory bodies by requiring entities supervised and regulated by the BMA to furnish information on demand to the BMA in connection with foreign regulatory requests. In 2022, the objects of the BMA were expanded to include promoting the protection of customers using products and services provided by financial institutions (such as the Bank) through the oversight by the BMA of the conduct of business by those financial institutions.

Banks and Deposit Companies Act 1999

The BDCA prohibits any person from carrying on a deposit-taking business in or from within Bermuda unless that person is a company incorporated in Bermuda and licensed by the BMA under the BDCA. The BDCA provides for three classes of licenses: banking licenses, restricted banking licenses and deposit company licenses. The Bank holds a banking license and a deposit company license. Unless otherwise permitted by the BMA, a company that holds a banking license must provide a range of minimum services to the public in Bermuda, including (without limitation) current accounts in Bermuda dollars, other deposit accounts, loan facilities in Bermuda Dollars, foreign exchange services and credit card or debit card facilities. A company holding a deposit company license typically offers a small range of services but, unless otherwise permitted by the BMA, must also provide some specified services to the public in Bermuda, including (without limitation) savings, deposit or other similar accounts in Bermuda Dollars and loans in Bermuda Dollars secured on mortgages of real property in Bermuda.

As the agency responsible for administering the BDCA, regulating deposit-taking businesses and protecting depositors, the BMA has broad authority to compel companies licensed under the BDCA to take or cease specific actions and comply with informational or access requests. Under the BDCA, the BMA can, or can compel these companies, including us, to, among other things, do any or all of the following:

- submit a report prepared by the Bank's auditors or by an accountant or other person with professional skills on any matter about which the BMA could require us to provide information;
- produce documentation or other information as the BMA may reasonably require; and
- permit any officer, servant or agent of the BMA, on producing evidence of his authority, to enter the Bank's premises to obtain information and documents.

In addition, the BMA has the power to do any or all of the following:

- require the Bank to take certain steps or to refrain from adopting or pursuing a particular course of action or to restrict the scope of the Bank's business in a particular way;
- appoint competent persons to investigate and report to the BMA on the Bank's business or the Bank's ownership and control;
- restrict the scope of a license or revoke a license; and
- vary or revoke the Bank's banking license and to give directions if it feels these are necessary to protect the Bank's depositors.

The Bank's failure to comply with any of the statutory requirements set forth in the BDCA could result in civil or criminal penalties.

The Bank is required to report certain transactions to the BMA. These include any transaction or transactions relating to any one person as a result of which the Bank would be exposed to a risk of incurring losses in excess of 10% of the Bank's available capital resources, or where the Bank proposes to enter into a transaction or transactions relating to any one person, which, either alone or together with previous transactions entered into by the Bank in relation to the same person, would result in the Bank being exposed to the risk of incurring losses in excess of 25% of its available capital resources. This also applies where the transaction relates to different persons if they are connected in such a way that the financial soundness of any of them may affect the financial soundness of the others or the same factors may affect the financial soundness of both or all of them. The BMA may extend the scope of this requirement to the Bank's subsidiaries even if these subsidiaries are not licensed under the BDCA as if the transactions and available capital resources of the Bank's subsidiaries were included in the Bank's available capital resources. For the purpose of the foregoing, the transactions which must be reported by the Bank to the BMA are those between the Bank and a person where:

- (a) that person incurs an obligation to the Bank or as a result of which such person may incur such an obligation;
- (b) the Bank will incur, or as a result of which it may incur, an obligation in the event of that person defaulting on an obligation to a third party; or
- (c) the Bank acquires or incurs any obligation to acquire, or as a result of which it may incur an obligation to acquire, an asset the value of which depends wholly or mainly on that person performing their obligations or otherwise on his financial soundness.

The risk of loss attributable to the transaction is, in a case within paragraph (a) or (b), the risk of the person concerned defaulting on the obligation therein mentioned and, in a case within paragraph (c), the risk of the person concerned defaulting on the obligations therein mentioned or of a deterioration in such person's financial soundness. The Bank's available capital resources may be determined by the BMA, after consultation with it and in accordance with principles published by the BMA, which are currently the Basel III principles described above. It is an offense for the Bank to fail to make the required reports.

Under the BDCA, any person who becomes a significant shareholder of a deposit-taking institution, which is defined to include persons, either individually or with associates (within the meaning of the BDCA), who (i) hold 5% or more of the shares in the institution or another company of which it is a subsidiary company; or (ii) are entitled to exercise, or control the exercise of 5% or more of the voting power at any general meeting of the institution or of another company of which it is such a subsidiary, must notify the BMA in writing of that fact within seven days. Failure to provide the BMA with prompt and appropriate notice would constitute an offense that could result in a fine.

The BDCA prohibits a person from becoming a shareholder controller of any company licensed under the BDCA unless the person provides written notice to the BMA of his intent to do so and the BMA does not object. The definition of shareholder controller is set out in the BDCA but generally refers to a person who, among other things, either alone or with any associate or associates (i) holds 10% or more of the shares in the licensed institution or another company of which it is a subsidiary company; (ii) is entitled to exercise, or control the exercise of 10% or more of the voting power at any general meeting of the licensed institution or another company of which it is such a subsidiary; or (iii) is able to exercise a significant influence over the management of the institution or of another company of which it is a subsidiary by virtue of holding shares in or an entitlement to exercise or control the exercise of the voting power at any general meeting of either the institution or the other company concerned. The BDCA distinguishes between shareholder controllers of the following threshold descriptions: "10% shareholder controllers," "20% shareholder controllers," "30% shareholder controllers," "40% shareholder controllers," "50% shareholder controllers," "60% shareholder controllers" and "principal shareholder controllers" who have a 75% or greater interest. A person who intends to become a shareholder controller, or a shareholder controller who intends to increase his shareholding/control, meaning generally, ownership of shares or the ability to exercise or control the exercise of voting rights attached to shares, beyond his present threshold, must provide written notice to the BMA that he intends to do so. It is an offense not to give this notice. The BMA may object to a person's notice of intent to become a shareholder controller of any description or to an existing shareholder controller seeking to increase their control where it appears to the BMA that, among other things, such person is not or is no longer a fit and proper person to be such controller. If the BMA objects, the BMA will provide such person with written notice of its objection.

Prior to serving a notice of objection, the BMA shall serve the person seeking to become a shareholder controller of any description or existing shareholder controller seeking to increase their control with a preliminary written notice stating that the BMA is considering service on that person of a notice of objection, and that notice shall state among other things, the reasons for the BMA's proposed objection. The statement of the BMA's reasons for their proposed objection will, however, be subject to the BMA's determination that such statement would not involve the disclosure of confidential information, the disclosure of which would be prejudicial to a third party. A person served with a preliminary written notice may, within a period of 28 days beginning with the day on which the notice is served, make written representations to the BMA and the BMA shall take any such representations into account in deciding whether to serve a notice of objection.

If three months pass from the date of giving notice of intent to the BMA without the BMA serving a notice of objection, then the person may become a shareholder controller as requested in the notice of intent. In practice, the BMA's procedure is generally to respond to a shareholder controller notification of intent.

If a person becomes a shareholder controller or increases their shareholding/control in spite of the BMA's objection thereto, if a shareholder controller fails to comply with the foregoing notice requirements or if a shareholder controller continues as such after being given notice of objection to his or her being a shareholder controller, the BMA may take the actions specified in the BDCA, including revoking the relevant license where a 50%, 60% or principal shareholder controller is involved, or mandating that any specified shares become subject to one or more of the following restrictions:

- any transfer of or agreement to transfer those shares or, in the case of unissued shares, any transfer of or any agreement to transfer the right to be issued with them, will be void;
- no voting rights may be exercisable in respect of the shares;
- no further shares may be issued in right of them or pursuant to any offer made to their holder; or
- except in liquidation, no payment may be made of any sums due from the institution on the shares, whether in respect of capital or otherwise.

A court in Bermuda may, on the application of the BMA, order the sale of any such shares. Any person may appeal to a tribunal constituted under the BDCA for a review of a notice of objection given by the BMA as described above. However, this right of appeal does not apply to a person in any case in which such person has failed to give a notice or has become or continued to be a controller in contravention of the BDCA. In addition, if a person has had its license revoked or has been subject to any of the restrictions set forth above, the tribunal may confirm or reverse the decision which is the subject of the appeal but shall not have power to vary it except:

- where the decision was made to impose or vary any restriction, the tribunal may direct the BMA to impose different restrictions or to vary them in a different way; or
- where the decision was to revoke a license, the tribunal may direct the BMA to restrict it instead.

In the event that the BMA imposes any of the restrictions listed above, the restrictions may apply to:

- all shares of the institution where the person in question is a shareholder controller that (i) are held by him or any associate of his, and (ii) were not so held immediately before he became such shareholder controller of the institution; and
- all shares in another company where the person in question became a shareholder controller (i) as a result of the acquisition by him or any associate of his of shares in such other company, and (ii) the shares were not so held before he became a shareholder controller of such institution.

A company licensed under the BDCA must give written notice to the BMA in the event that any person has either become or ceased to be a director, controller or senior executive of such licensed company. The written notice is required to be given to the BMA within 14 days beginning with the day on which the licensed company becomes aware of the relevant change in director, controller or senior executive. The definition of "controller" is set out in the BDCA but generally refers to a shareholder controller, a managing director or chief executive officer of the institution or of another company of which it is a subsidiary, or a person in accordance with whose directions or instructions the directors of the institution or of another company of which the institution is a subsidiary, or persons who are shareholder controllers (or any of them) are accustomed to act.

In August 2022, the BMA published a new code of conduct issued pursuant to section 8A of the BDCA. The Bank is required to comply with this code of conduct, and the BMA has indicated that the Bank's compliance with the BDCA code of conduct will be considered when determining whether the Bank's business is being conducted in a prudential manner as required under the BDCA's minimum criteria for licensing. The BDCA code of conduct seeks to ensure that, amongst other things, institutions licensed

under the BDCA deal with their customers fairly and equitably. To this end, the BDCA code of conduct sets out principles the Bank is expected to observe in several key areas including compliance with laws, integrity and ethics, conflicts of interests, handling of customer information, internal management controls, publication and disclosure of license and cooperation with regulatory authorities.

Also in August 2022, the BDCA was amended to add provisions that give the Minister of Finance of Bermuda, in consultation with the BMA, the power to make regulations regulating any commercial or operational business fee, charge or penalty the Bank proposes to charge its clients. These provisions are not yet in force, and no related regulations have been issued to date.

Trusts (Regulation of Trust Business) Act 2001

The principal purpose of the Trusts (Regulation of Trust Business) Act 2001 (the "Trusts Business Act"), is to regulate "trust business," which is generally defined as providing the services of a trustee as a business, trade, profession or vocation. Under the Trusts Business Act, a license is required to conduct trust business in or from within Bermuda. Licenses are designated as either "unlimited" or "limited." Only bodies corporate are entitled to obtain unlimited licenses, which allow them to conduct trust business and solicit business from the public generally. Holding a license under the Trusts Business Act obliges the licensed undertaking to maintain a physical presence in Bermuda at which the licensed undertaking is directed and managed. A licensed undertaking is also required to hold all client funds separately from its own funds or funds held in respect of any other business and maintain such books of account and other records such that client funds may be readily identified at any time.

At present, the Bank and certain of its subsidiaries hold unlimited licenses issued by the BMA pursuant to the Trusts Business Act. Pursuant to Section 6 of the Trusts Business Act, the BMA has published a Statement of Principles, in accordance with which it is acting or purporting to act with respect to the exercise of its powers under the Trusts Business Act, including (without limitation) the BMA's minimum licensing criteria, the grounds for revocation of licenses, the power to grant, revoke or restrict a license and the power to obtain information or require the production of documents. As at December 31, 2019, the BMA amended the minimum licensing criteria under the Trusts Business Act, such that a licensed undertaking is not regarded as conducting its business in a prudent manner (which is a requirement for licensing) unless it maintains or will maintain adequate liquidity, having regard to the relationship between its assets and its actual and contingent liabilities, to the time at which those liabilities will or may fall due and its assets mature, and to other factors appearing to the BMA to be relevant. In addition, pursuant to Section 7 of the legislation, the BMA published a Code of Practice that provides guidance as to the duties, requirements, procedures, standards and principles to be observed by persons carrying on trust business under the Trusts Business Act.

The BMA's powers under the Trusts Business Act include (without limitation) the power to:

- impose conditions on a license with respect to scope and type of business, to protect a client or potential client of a licensee;
- revoke a license in certain circumstances including if the licensee has not complied with the licensing criteria; and
- request and obtain information from a licensee to ensure compliance with the Trusts Business Act, and to safeguard the interests of the licensee's clients and potential clients.

The Trusts Business Act prohibits a person from becoming a 10% shareholder controller or a majority shareholder controller of a licensed undertaking, unless such person provides written notice to the BMA of his intent to do so and the BMA does not object. It is an offense not to provide this notice. The definition of shareholder controller is set out in the Trusts Business Act, but generally refers to a person who, among other things, either alone or with any associate or associates (within the meaning of the Trusts Business Act): (i) holds 10% or more of the shares in the licensed undertaking or another company of which it is a subsidiary company; or (ii) is entitled to exercise, or control the exercise of 10% or more of the voting power at any general meeting of the licensed undertaking or another company of which it is such a subsidiary or (iii) is able to exercise a significant influence over the management of a licensed undertaking or of another company of which the licensed undertaking is a subsidiary by virtue of holding shares in or an entitlement to exercise or control the exercise of the voting power at any general meeting of either the licensed undertaking or the other company concerned. A "majority shareholder controller" is defined under the Trusts Business Act as a shareholder controller which, among other things, (i) holds 50% or more of the shares in the licensed undertaking or another company of which it is a subsidiary company; or (ii) is entitled to exercise, or control the exercise of 50% or more of the voting power at any general meeting of the licensed undertaking or another company of which it is such a subsidiary.

The BMA may object to a person's notice of intent to become a 10% shareholder controller or majority shareholder controller or may object to an existing shareholder controller of any description where it appears to the BMA that, among other things, such person is not or is no longer a fit and proper person to be such a controller of the licensed undertaking. If the BMA objects, the BMA will provide such person with a written notice of objection. Prior to serving any such notice of objection, the BMA shall serve the person seeking to become a shareholder controller or the existing shareholder controller with a preliminary written notice stating that the BMA is considering service on that person of a notice of objection, stating, among other things, the reasons for the BMA's proposed objection. The statement of the BMA's reasons for its proposed objection will, however, be subject to the BMA's determination that such statement would not involve the disclosure of confidential information, the disclosure of which would be prejudicial to a third party. A person served with a preliminary written notice may, within a period of 28 days beginning with the day on which the notice is served, make written representations to the BMA and the BMA shall take any such representations into account in deciding whether to serve a notice of objection.

If three months pass from the date of notifying the BMA of a new shareholder controller or an increased shareholding/control beyond a shareholder controller's then current threshold, without the BMA serving a notice of objection, then the person may become a shareholder controller as requested in the notice. In practice, the BMA's procedure is generally to respond to a person's shareholder controller notification.

If a person becomes a shareholder controller or increases their shareholding control, in spite of the BMA's objection thereto, if a shareholder controller fails to comply with the foregoing notice requirements or if a shareholder controller continues as such after being given notice of objection to his being a shareholder controller, the BMA may take certain actions, including revoking the relevant license where a shareholder controller holding 50% or more of the shares of the licensed undertaking is involved or mandating that any specified shares become subject to one or more of the following restrictions:

- any transfer of or agreement to transfer those shares or, in the case of unissued shares, any transfer of or any agreement to transfer the right to be issued with them, will be void;
- no voting rights may be exercisable in respect of the shares;
- no further shares may be issued in right of them or pursuant to any offer made to their holder; or
- except in liquidation, no payment may be made of any sums due from the licensed undertaking on the shares, whether in respect of capital or otherwise.

A court in Bermuda may, on the application of the BMA, order the sale of any such shares. Any person may appeal to a tribunal constituted under the Trusts Business Act for a review of a notice of objection given by the BMA as described above. However, this right of appeal does not apply to a person in any case in which such person has failed to give a notice or has become or continued to be a controller in contravention of the Trusts Business Act. In addition, if a person has had their license revoked or has been subject to any of the restrictions set forth above, the tribunal may confirm or reverse the decision which is the subject of the appeal but shall not have power to vary it except:

- where the decision was made to impose different restrictions or vary them in a different way, the tribunal may direct the BMA to impose different restrictions; or

- where the decision was to revoke a license, the tribunal may direct the BMA to restrict it instead.

In the event that the BMA imposes any of the restrictions listed above, the restrictions may apply to:

- all shares of the licensed undertaking of which the person in question is a shareholder controller that (i) are held by him or any associate of his, and (ii) were not so held immediately before he became such shareholder controller of the licensed undertaking; and
- all shares in another company where the person in question became a shareholder controller (i) as a result of the acquisition by him or any associate of his of shares in such other company, and (ii) the shares were not so held before he became a shareholder controller of such licensed undertaking.

An undertaking licensed under the Trusts Business Act must give written notice to the BMA in the event that any person has either become or ceased to be a controller or officer of such licensed undertaking. The written notice is required to be given to the BMA within 14 days beginning with the day on which the licensed undertaking becomes aware of the change in controller or officer. The definition of "controller" is set out in the Trusts Business Act but generally refers to a shareholder controller, a managing director or chief executive officer of the undertaking or of another company of which it is a subsidiary, or a person in accordance with whose directions or instructions the directors of the undertaking or of another company of which the undertaking is a subsidiary, or persons who are shareholder controllers (or any of them) are accustomed to act. The definition of "officer" under the Trusts Business Act includes a director, secretary or any senior executive.

Investment Business Act 2003

The Investment Business Act 2003 (the "Investment Business Act") prohibits any person from carrying on, or purporting to carry on, an investment business in or from within Bermuda unless that person holds a license granted under the Investment Business Act, or is registered as a Class A registered person or a Class B registered person under the Investment Business Act (or is otherwise designated as non-registrable). A person is deemed to carry on investment business in or from Bermuda if it is incorporated or formed in Bermuda and carries on investment business, or is incorporated or formed outside of Bermuda and carries on investment business in or from Bermuda. The Investment Business Act defines "investment business" broadly as the business of dealing in investments, arranging deals in investments, managing or offering investments and giving advice on investments.

Under the Investment Business Act, the BMA is given the authority to grant licenses and to supervise license holders (which includes issuing codes of conduct or practice and making rules prescribing prudential and technical standards). The BMA will only grant a license if it is satisfied that the applicant complies with licensing criteria set out in the Investment Business Act, which include (without limitation) that controllers and senior executives of the applicant are fit and proper persons to carry on such business, the applicant company's business is effectively directed by at least two individuals (unless the BMA otherwise approves), the Board of the applicant has a number of non-executive directors considered appropriate by the BMA, the applicant's business is conducted in a prudent manner, the applicant maintains its principal place of business in Bermuda, the position of the applicant in the group does not obstruct effective consolidated supervision and the applicant will carry on the investment business with integrity and professional skill appropriate to the nature and scale of its activities.

At the present time, the Bank and its wholly owned subsidiaries Butterfield Trust (Bermuda) Limited, Butterfield Securities (Bermuda) Limited and Butterfield Asset Management Limited hold licenses under the Investment Business Act.

Under the Investment Business Act, the BMA may require an accountant's or auditor's report on a license holder or the appointment of an inspector to carry out an investigation into the affairs of a license holder and/or demand the production of documents or information relating to the investment business of a license holder. The Investment Business Act also grants the BMA broad powers to enforce the provisions of the Investment Business Act, including (without limitation) powers to issue directions, to vary, restrict or cancel a license, to appoint a person to manage and administer an offending investment business, to give directions desirable to safeguard the interests of the investment provider's clients, to levy fines and to seek from the court injunctions and restitution orders.

The Investment Business Act prohibits a person from becoming a 10% shareholder controller or a majority shareholder controller of an investment provider, unless such person provides written notice to the BMA of his intent to do so and the BMA does not object. It is an offense not to provide this notice. The definition of 10% shareholder controller is set out in the Investment Business Act, but generally refers to a person who, among other things, either alone or with any associate or associates (within the meaning of the Investment Business Act): (i) holds 10% or more of the shares in the investment provider or its parent undertaking; (ii) is entitled to exercise, or control the exercise of 10% or more of the voting power in the investment provider or in the parent undertaking; or (iii) is able to exercise a significant influence over the management of the investment provider or its parent undertaking by virtue of the voting power in the investment provider or its parent undertaking. A "majority shareholder controller" is defined under the Investment Business Act as a shareholder controller which (i) holds 50% or more of the issued and outstanding shares in the investment provider or its parent undertaking; or (ii) is entitled to exercise, or control the exercise of 50% or more of the voting power in the investment provider or in the parent undertaking.

The BMA may object to a person's notice of intent to become a 10% shareholder controller or majority shareholder controller or to an existing shareholder controller of any description where it appears to the BMA that, among other things, such person is not or is no longer a fit and proper person to be such controller of the licensed company. If the BMA objects, the BMA will provide such person with a written notice of objection. Prior to serving any such notice of objection, the BMA serves the person seeking to become a shareholder controller or will serve an existing shareholder controller with a preliminary written notice stating that the BMA is considering service on that person of a notice of objection, stating, among other things, the reasons for the BMA's proposed objection. The statement of the BMA's reasons for their proposed objection will, however, be subject to the BMA's determination that such statement would involve the disclosure of confidential information, the disclosure of which would be prejudicial to a third party. A person served with a preliminary written notice may, within a period of 28 days beginning with the day on which the notice is served, make written representations to the BMA and the BMA shall take any such representations into account in deciding whether to serve a notice of objection.

If ninety days pass from the date of notifying the BMA of a new shareholder controller or an increased shareholding/control beyond a shareholder controller's then current threshold, without the BMA serving a notice of objection, then the person may become a shareholder controller as requested in the notice. In practice, the BMA's procedure is generally to respond to a person's shareholder controller notification.

If a person becomes a shareholder controller or increases their shareholding/control in spite of the BMA's objection to his becoming a shareholder controller, or if a shareholder controller fails to comply with the foregoing notice requirements, or if a shareholder controller continues as such after being given notice of objection to his being a shareholder controller, the BMA may take certain actions, including revoking the relevant license where a shareholder controller holding 50% or more of the shares of the licensed company is involved or mandating that any specified shares become subject to one or more of the following restrictions:

- any transfer of or agreement to transfer those shares or, in the case of unissued shares, any transfer of or any agreement to transfer the right to be issued with them, will be void;
- no voting rights may be exercisable in respect of the shares;
- no further shares may be issued in right of them or pursuant to any offer made to their holder; or
- except in liquidation, no payment may be made of any sums due from the investment provider on the shares, whether in respect of capital or otherwise.

A court in Bermuda may, on the application of the BMA, order the sale of any such shares. Any person may appeal to a tribunal constituted under the Investment Business Act for a review of a notice of objection given by the BMA as described above. However, this right of appeal does not apply to a person in any case in which such person has failed to give a notice or has become or continued to be a controller in contravention of the Investment Business Act. In addition, if a person has had its license revoked or has been subject to any of the restrictions set forth above, the tribunal may confirm or reverse the decision which is the subject of the appeal but shall not have power to vary it except:

- where the decision was made to impose or vary any restriction, the tribunal may direct the BMA to impose different restrictions or to vary them in a different way; or
- where the decision was to revoke a license, the tribunal may direct the BMA to restrict it instead.

In the event that the BMA imposes any of the restrictions listed above, the restrictions may apply to:

- all shares of the investment provider of which the person in question is a shareholder controller that (i) are held by him or any associate of his; and (ii) were not so held immediately before he became such shareholder controller of the investment provider; and
- all shares in another company where the person in question became a shareholder controller (i) as a result of the acquisition by him or any associate of his of shares in such other company; and (ii) the shares were not so held before he became a shareholder controller of such investment provider.

A company licensed under the Investment Business Act must give written notice to the BMA in the event that any person has either become or ceased to be a controller or officer of such investment provider. The written notice is required to be given to the BMA within 14 days beginning with the day on which the investment provider becomes aware of the change in controller or officer. The definition of "controller" is set out in the Investment Business Act but generally refers to a shareholder controller, a managing director or chief executive officer of the investment provider or of another company of which it is a subsidiary, or a person in accordance with whose directions or instructions the directors of the investment provider or of its parent undertaking or persons who are shareholder controllers (or any of them) are accustomed to act. The definition of "officer" under the Investment Business Act includes a director, secretary or any senior executive.

Corporate Service Provider Business Act 2012

The Corporate Service Provider Business Act 2012 ("CSPB") regulates persons carrying on a corporate service provider business in Bermuda. "Corporate service provider business" in this context means the provision of any of the following services for a profit: (a) acting as a company formation agent or agent for establishment of a partnership; (b) providing nominee services, including (among other things) providing nominee shareholders; (c) providing administrative and secretarial services to companies or partnerships (including, among other things, providing a registered office and maintaining the books and records of a company or partnership); (d) performing functions in the capacity as a resident representative under various Bermuda statutes; and (e) providing any other corporate or administrative services as may be specified in regulations made under the CSPB. Under the CSPB, the Bank or any of its subsidiaries is required to hold a corporate service provider license to lawfully provide corporate services to our customers in Bermuda. Licensing under the CSPB is administered by the BMA. Holding a license under the CSPB obliges the licensed undertaking to maintain a physical presence in Bermuda at which the licensed undertaking is directed and managed. A licensed undertaking is also required to hold all client funds separately from its own funds or funds held in respect of any other business and maintain such books of account and other records such that client funds may be readily identified at any time.

Pursuant to the provisions of the CSPB any person who, together with their associates (within the meaning of the CSPB), intends to become either a shareholder controller or a majority shareholder controller of a CSPB licensed entity, must first serve notice of their intent to do so on the BMA and either receive a notice of non-objection from the BMA, or wait for the expiration of a three month period starting from the date of the notice to the BMA without the BMA having served a written notice of objection. A "shareholder controller" under the CSPB is any person who, either alone or with any associate or associates, (i) holds 10% or more of shares of the licensed entity (if it is a company) or 10% or more of another company of which the licensed entity is a subsidiary; (ii) is entitled to control or control the exercise of 10% or more of the voting power at any general meeting of the licensed entity (if it is a company) or of another company of which the licensed entity is a subsidiary; or (iii) is able to exercise a significant influence over the management of a licensed entity or of another company of which the licensed entity is a subsidiary by virtue of holding shares in or an entitlement to exercise or control the exercise of the voting power at any general meeting of either the licensed entity (if it is a company) or its holding company. A "majority shareholder controller" under the CSPB has the same meaning as limbs (i) and (ii) in the preceding sentence, save that the relevant percentage threshold for ownership is 50% or more.

In addition to the requirement to notify and obtain BMA non-objection (whether express or deemed) of any change in shareholder controller or majority shareholder controller of a CSPB licensed entity, if at any time it appears to the BMA that a person who is a "controller" of any description of a CSPB licensed entity is not a fit and proper person for such role, the BMA may serve a written notice of objection to that controller; provided that, before serving such a notice, the BMA must serve that person with a preliminary written notice stating that the BMA is considering service on that person of a notice of objection, specifying the reasons for which it appears to the BMA why that person is not or is no longer a fit and proper person and advising as to the rights of that person to make written representations to the BMA within 28 days beginning on the day on which such notice is served, and that such written representations shall be taken into account by the BMA in deciding whether to serve a notice of objection. For these purposes a "controller" includes (i) a managing director of a licensed entity or the licensed entity's holding company; (ii) the CEO of the licensed entity or the licensed entity's holding company; and (iii) a person in accordance with whose directions or instruction the directors of the licensed entity (or its holding company) are accustomed to act. Upon determining that any individual is not a fit and proper person, the BMA may pass a prohibition order, thereby preventing that individual from exercising any functions in connection with any business requiring licensing under the CSPB. Furthermore, under the CSPB, a licensed entity is required to give written notice to the BMA of any person becoming or ceasing to be a controller or an "officer" (director, company secretary or senior executive) of the licensed entity.

Breaches of the CSPB are punishable by a range of criminal and civil penalties including fines, imprisonment and public censure; breaches can result in the licensed entity losing its license and therefore its ability to conduct corporate service provider business. The BMA is also empowered to restrict a controller's ability to sell any shares (and exercise any rights in respect of such shares) held by the controller in a CSPB licensed entity if they continue to be or become a controller following a notice of objection from the BMA.

Companies Act 1981

As a local company incorporated in Bermuda, the Bank is subject to the Companies Act 1981 (the "Companies Act"). Under section 114 of the Companies Act, no local company may carry on business of any sort in Bermuda unless, among other things, (i) it complies with the control and ownership requirements set out in Part I of the Third Schedule of the Companies Act; (ii) it is licensed under section 114B of the Companies Act and is carrying on such business in accordance with the terms and conditions imposed in such license; or (iii) its shares are listed on a designated stock exchange and the company is engaged as a business in a material way in a prescribed industry pursuant to section 114(1)(e) of the Companies Act.

In December 2000, the Minister of Finance issued to the Bank a license pursuant to section 114B of the Companies Act allowing the Bank to carry on business in Bermuda without complying with certain provisions of the Third Schedule to the Companies Act. Effective June 10, 2016, the Bank relinquished its section 114B license and carries on business in Bermuda without complying with the provisions of the Third Schedule in reliance upon the exemption in section 114(1)(e) of the Companies Act. The Bank qualifies for this statutory exemption by virtue of (i) the listing of the Bank's shares on the BSX, which is a "designated stock exchange" for the purposes of the Companies Act and (ii) the Bank's material business of banking, which is a "prescribed industry" for the purposes of the Companies Act.

Exchange Control

The Bank is designated as resident in Bermuda for exchange control purposes.

The BMA has given its consent for the issue and free transferability of all of the common shares to and between non-residents of Bermuda for exchange control purposes, provided the Bank's shares remain listed on an appointed stock exchange, which includes the NYSE. Approvals or permissions given by the BMA do not constitute a guarantee by the BMA as to our performance or our creditworthiness. Accordingly, in giving such consent or permissions, the BMA shall not be liable for the financial soundness, performance or default of our business or for the correctness of any opinions or statements expressed in this report.

Financial Crime Regulation

Bermuda has enacted a number of laws relating to combating money laundering and terrorist financing. These laws include the Proceeds of Crime Act 1997, the Anti-Terrorism (Financial and Other Measures) Act 2004, the Proceeds of Crime (Anti-Money Laundering and Anti-Terrorist Supervision and Enforcement) Act 2008 and the Proceeds of Crime (Anti-Money Laundering and Anti-Terrorist Financing) Regulations 2008, the Financial Intelligence Agency Act 2007, and the Anti-Terrorism (Financial and Other Measures) (Businesses in Regulated Sector) Order 2008 each as amended from time to time.

The Bank may be regulated together with its branches and subsidiaries in respect of anti-money laundering and anti-terrorist financing policies and procedures as a "financial group" if so designated by the Bermuda minister responsible for justice. Furthermore, under the Bribery Act 2016 of Bermuda, the Bank may be guilty of an offense if persons associated with the Bank (which can include the Bank's employees, agents or subsidiaries) bribe another person intending to obtain or retain business for the Bank or to obtain or retain an advantage in the conduct of business for the Bank. It is a defense to such offenses if the Bank proves that it has in place adequate procedures designed to prevent persons associated with the Bank from undertaking such bribery.

Following the UK's exit from the EU, the UK enacted the Sanctions and Anti-Money Laundering Act 2018 (SAML) as enabling legislation for a raft of economic and other sanctions, and money laundering and terrorist financing regulations. Regulations made under SAML have been extended to certain overseas territories (but not Bermuda, owing to Bermuda's unique measure of self-government) by Order in Council (the "Orders"). Bermuda has separately applied the Orders in its domestic law under the International Sanctions Act 2003. They are listed in the International Sanctions Regulations 2013. Such action to apply the Orders in Bermuda ensures that the list of financial sanctions targets in Bermuda tracks the UK Sanctions List maintained by HM Treasury's Office for Financial Sanctions Implementation. Bans on new investment and on financial or professional services also track applicable UK sanctions.

Stamp Duty

Stamp duty is a tax in Bermuda imposed on written documents. The governing legislation is the Stamp Duties Act 1976, as amended (the "Stamp Duties Act"). The Stamp Duties Act sets out the instruments that are subject to stamp duty, which generally include certain instruments or documents as specified in the Stamp Duties Act that are executed in Bermuda or, if executed outside of Bermuda, are then brought into Bermuda.

There are certain limited stamp duty exemptions under the Bermuda Stock Exchange Company Act 1992 (the "BSX Act"), which extend to local companies, the securities of which are listed on the BSX. The Bank's common shares are currently listed on the NYSE and BSX. Pursuant to the BSX Act, the provisions of the Stamp Duties Act will not apply to any instrument which relates to (i) a conveyance or transfer on sale, (ii) a conveyance or transfer to effect or having the effect of a voluntary disposition inter vivos, or (iii) any agreement for the lending and borrowing, of any securities which are listed on the BSX. Accordingly, for so long as the common shares of the Bank remain listed on the BSX (and to the extent any other securities issued by the Bank are listed on the BSX), the foregoing stamp duty exemptions under the BSX Act would apply. However, dealings in the Bank's common shares beyond the limited exemptions under the BSX Act may attract stamp duty under various heads of the Schedule to the Stamp Duties Act. For example, ad valorem stamp duty may be payable (i) where security is granted over shares of the Bank, (ii) where shares of the Bank form part of a deceased's estate and probate is sought, and (iii) on a share certificate where the share is issued by the Bank for the first time at a premium in excess of the par value thereof.

The Stamp Duties Act prescribes the persons liable to pay the stamp duty, whether the amount of duty is a fixed or ad valorem amount and the time period in which the duty must be paid, depending on the nature of the instrument. The Stamp Duties Act also sets out the consequences for failure to stamp instruments which are subject to duty.

Generally, if a stampable document has been executed in Bermuda or has been executed outside of Bermuda and then brought into Bermuda and stamp duty is not paid, the document is not valid for any purpose (including registration) in Bermuda, until such time as it is stamped. In addition, a stampable document which is not stamped (i) is not admissible in court proceedings in Bermuda, except in criminal proceedings or stamp duty violation prosecutions; and (ii) may not be acted upon, filed, or registered by any public official or by any company. For any instrument which is liable to stamp duty that is not duly stamped, every person who is specified in the Stamp Duties Act as liable for stamping commits an offense.

Limits on Shareholding

Generally, the Companies Act imposes limits on the percentage of shares in a local company carrying on business in Bermuda which may be held by persons who are non-Bermudian as that term is defined in the Companies Act. As described above, the Bank relies on an exemption under section 114(1)(e) of the Companies Act to these ownership and related control requirements.

Additionally, the bye-laws of the Bank restrict the voting rights of a person who is not "Bermudian" (as such term is defined in the Companies Act) and who is "interested" (as such term is defined in the bye-laws) in the shares of the Bank which constitute more than 40% of all shares then issued and outstanding, and such person is not entitled to vote the shares which are in excess of this 40% interest at any general meeting without the prior written approval of the Minister of Finance.

In addition, there are certain prior approval requirements pursuant to the BDCA, the Trusts Business Act, the CSPB and the Investment Business Act with respect to any person who seeks to become a "shareholder controller" (as defined in each of those Acts) of the Bank.

Deposit Insurance Scheme

Pursuant to the Deposit Insurance Act 2011 and the Deposit Insurance Rules 2016 of Bermuda, a Deposit Insurance Scheme ("DIS") has come into effect in Bermuda. The DIS is administered by the Bermuda Deposit Insurance Corporation. The DIS is designed to protect the deposits of individuals, charities, unincorporated associations, partnerships, sole proprietors and small businesses by guaranteeing up to \$25,000 of their aggregate Bermuda Dollar deposits in the event of a Bermuda deposit taking institution's failure. The DIS is backed by a Deposit Insurance Fund which is in turn funded from premium contributions that are payable by all banks and credit unions licensed by the BMA. As a bank licensed by the BMA, we are required to be a member of the DIS and pay contributions to the Deposit Insurance Fund. Currently, our premium contribution is calculated by the Bermuda Deposit Insurance Corporation as 0.25% per annum of the average total amount of our Bermuda Dollar deposits that are covered by

the DIS guarantee over a rolling three-month period based on information disclosed by us to the Bermuda Deposit Insurance Corporation. Each contribution to the Deposit Insurance Fund is payable every three months in arrears.

Personal Information Protection Act 2016

Bermuda's principal data protection legislation is the Personal Information Protection Act 2016 ("PIPA"). PIPA applies to every organization (which includes any individual, entity or public authority) that uses personal information in Bermuda where that personal information is used by automated or other means which form, or are intended to form, part of a structured filing system. For the purposes of PIPA, "personal information" means any information about an identified or identifiable individual (meaning a natural person), and "use" or "using" are very broadly defined and effectively include possessing or carrying out any operation on personal information. The Bank uses and holds individuals' personal information in Bermuda, so must comply with the provisions of PIPA.

The majority of the operative provisions of PIPA, which include certain personal information privacy rights for individuals and specific obligations on organizations that control the processing of personal information, are not yet in force in Bermuda. The first Bermuda Privacy Commissioner was appointed with effect from January 20, 2020, and this appointment is an important step in bringing the remaining operative provisions of PIPA into force. As of December 2022, there is no clear timetable for the publication of PIPA codes of practice or the implementation of the remaining operating provisions, however, the Bermuda Throne Speech in November 2022 stated that the coming legislative session will see a phased implementation of PIPA.

The Cayman Islands

The Cayman Islands Monetary Authority ("CIMA")

Our activities in the Cayman Islands are regulated by CIMA. CIMA is responsible for currency management, regulation and supervision of the Cayman Islands financial services sector (which includes securities and investments business, banking, insurance and fiduciary services), advice to the Cayman Islands government and cooperation with overseas regulatory authorities. CIMA's principal focus is to promote and maintain a sound financial system in the Cayman Islands and to promote and enhance market confidence, consumer protection and the reputation of the Cayman Islands as a financial center.

CIMA has broad statutory powers of enforcement. These powers are intended to permit CIMA to have access to information held or maintained by a licensee as necessary and to enable CIMA to take appropriate remedial action if a licensee is in default of its obligations under applicable laws.

Relevant Legislation/Regulations

Banks & Trust Companies Act (2021 Revision)

The Banks and Trust Companies Act (2021 Revision) (the "BATCA") provides that it is an offense to conduct banking business or trust business without the appropriate license. Butterfield Bank (Cayman) Limited holds a category "A" banking license and a trust license, both issued by CIMA.

The BATCA is supplemented by certain regulations which, among other things, prescribe the fees that are payable by licensees and certain information that must be submitted to CIMA in connection with any license application.

Licensees must adhere to certain capital adequacy requirements and must file audited financial statements with CIMA within three months of their financial year-end. Prior written approval of CIMA is required in a number of circumstances including, but are not limited to, the issue, transfer or disposal of any shares, the appointment of a new director or senior officer or where the licensee wishes to conduct business that deviates from its business plan submitted at the time of its license application.

Securities Investment Business Act (2021 Revision), as amended

The Securities Investment Business Act (2021 Revision), as amended (the "SIBA") provides that a person shall not carry on, or purport to carry on, securities investment business in or from the Cayman Islands unless that person is for the time being licensed under SIBA or is exempted from the requirement to hold a license pursuant to SIBA. Butterfield Bank (Cayman) Limited holds a securities investment business license, issued by CIMA, to conduct its business.

SIBA is essentially designed to achieve the licensing and regulation of securities investment providers and applies to (i) any company, foreign company or partnership incorporated or registered in the Cayman Islands and carrying on "securities investment business" anywhere in the world, or (ii) any entity which has a "place of business" in the Cayman Islands through which "securities investment business" is carried on. The entity need not have a physical presence in the Cayman Islands in order for such entity to fall within the ambit of SIBA.

Certain categories of persons conducting activities that would otherwise fall within the definition of securities investment business are categorized as non-registrable persons under SIBA. Such persons include single family offices who do not advise third parties and managers of non-Cayman limited liability companies who carry on securities investment business only in that capacity. In addition, SIBA requires certain persons who are engaged in securities investment business with, among other things, sophisticated or high net worth persons (as such terms are defined in SIBA) to register as a registered person under SIBA. Upon such registration, a registered person is subject to CIMA regulation, however a number of requirements applicable to SIBA licensees do not apply to SIBA registered persons. For example, a SIBA registered person is not required to submit annual audited financial statements or business plans to CIMA.

Insurance Act, 2010 (as amended)

CIMA regulates the insurance industry in the Cayman Islands pursuant to the Insurance Act, 2010 (as amended) (the "IA"). Such regulation includes licensing, ongoing supervision, and enforcement.

Pursuant to the IA, a company is required to hold a license in order to carry on insurance or reinsurance business or business as an insurance agent, insurance broker or insurance manager in or from the Cayman Islands. Butterfield Bank (Cayman) Limited (which is not itself an insurer) holds an insurance agent license, issued by CIMA, permitting it to solicit domestic business on behalf of not more than one general insurer and one long term insurer.

Companies Act (2022 Revision) as amended

Butterfield Bank (Cayman) Limited is an ordinary resident company incorporated in the Cayman Islands, meaning that, subject to it being licensed under the BATCA, it can carry on business within the Cayman Islands. Butterfield Bank (Cayman) Limited is required to comply with the requirements of the Companies Act (2022 Revision), this being the principal statute governing the incorporation and ongoing operations of the Cayman Islands companies.

Butterfield Bank (Cayman) Limited is subject to the Anti-Money Laundering Regulations (2020 Revision) (the "Regulations") made pursuant to the Proceeds of Crime Act (2020 Revision) (the "PCL"), each as amended. The Regulations apply to anyone conducting "relevant financial business" in or from the Cayman Islands intending to form a business relationship or carry out a one-off transaction. The Regulations require a financial service provider to maintain certain anti-money laundering procedures including those for the purposes of verifying the identity and source of funds of an "applicant for business" except in certain circumstances, including where an entity is regulated by a recognized overseas regulatory authority and/or listed on a recognized stock exchange in an approved jurisdiction. In addition, if any person resident in the Cayman Islands knows or suspects, or has reasonable grounds for knowing or suspecting that another person is engaged in criminal conduct, or is involved with terrorism or terrorist property, and the information for that knowledge or suspicion came to their attention in the course of business in the regulated sector, or other trade, profession, business or employment, the person will be required to report such knowledge or suspicion to (i) the Financial Reporting Authority of the Cayman Islands (the "FRA"), pursuant to the PCL, if the disclosure relates to criminal conduct or money laundering; or (ii) a police officer of the rank of constable or higher, or the FRA, pursuant to the Terrorism Law (2018 Revision), if the disclosure relates to involvement with terrorism or terrorist financing and property.

The Cayman Islands Data Protection Act, (2021 Revision)

The Data Protection Act (2021 Revision) (the "DPA") came into force on September 30, 2019 and establishes a framework of rights and duties designed to safeguard individuals' personal data, balanced against the need of public authorities, businesses and organizations to collect and use personal data for legitimate purposes. The DPA was developed in line with international best practices while ensuring that it reflects the specific needs of the Cayman Islands. It is based substantially on the Data Protection Act, 1998 of the United Kingdom. The DPA defines "personal data" very widely to include any data which enables a living individual to be identified.

In common with most businesses, Butterfield Bank (Cayman) Limited records information in respect of individuals, particularly those who are employees, clients or suppliers, and the obligations under the DPA require a detailed review or establishment of policies and procedures in order to achieve compliance. Non-compliance with the DPA may have serious ramifications.

The DPA is centered on eight data protection principles under which personal data must:

- be processed fairly and only when specific conditions are met, including where consent has been given, where there is a legal obligation, or where it is necessary for the performance of a contract to which the data subject is a party. Additional conditions apply in respect of "sensitive personal data" (examples of which include racial or ethnic origin, political opinions, religious beliefs, trade union membership, genetic data, health, sex life and offenses);
- be obtained only for one or more specified lawful purposes, and shall not be further processed in any manner incompatible with such purposes;
- be adequate, relevant and not excessive in relation to the purpose or purposes for which they are collected or processed;
- be accurate and, where necessary, kept up to date;
- not be kept for longer than is necessary for the purpose;
- be processed in accordance with the rights of individuals as specified under the DPA;
- be protected by appropriate technical and organizational measures against unauthorized or unlawful processing, and against accidental loss, destruction or damage; and
- not be transferred abroad unless the country or territory to which it is transferred ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

Under the DPA, individuals have the right to be informed how personal data is processed and Butterfield Bank (Cayman) Limited is required to provide individuals with a privacy notice in this regard. Individuals also have the right (i) to request access to their personal data, (ii) to request rectification or correction of personal data, (iii) to request that processing of personal data be stopped or restricted and (iv) to require Butterfield Bank (Cayman) Limited to cease processing personal data for direct marketing purposes.

Individuals who believe that their personal data has been handled incorrectly or are not satisfied with responses from Butterfield Bank (Cayman) Limited to any requests made regarding the use of their personal data have a right under the DPA to complain to the Cayman Islands' Ombudsman.

The Bahamas

The Central Bank of The Bahamas

Butterfield Trust (Bahamas) Limited has been granted a license from the Central Bank of The Bahamas to conduct trust business from within The Bahamas. As the primary regulator of Butterfield Trust (Bahamas) Limited, the Central Bank of The Bahamas is responsible for the regulation and supervision of Butterfield Trust (Bahamas) Limited with respect to all of its operations, corporate governance issues, and compliance with applicable laws and regulations. The Central Bank of The Bahamas' regulations on capital adequacy and the regulatory framework within The Bahamas take into account the recommendations of the BCBS.

Relevant Legislation/Regulations

The Banks and Trust Companies Regulation Act and Regulations

The Banks and Trust Companies Regulation Act and Regulations set forth the basic provisions relating to the licensing and operations of banks and trust companies in The Bahamas, as well as the powers of the Central Bank of The Bahamas to supervise and audit the activities of such entities. As it relates to the preservation of confidentiality, the Banks and Trust Companies Regulation Act makes it an offense for certain individuals to disclose without customer consent, inter alia, the identity, assets, liabilities, transactions or accounts of a customer of a licensee, save for in specified circumstances.

The Central Bank of The Bahamas Act and Regulations

The Central Bank of The Bahamas Act provides general provisions relating to the structure and operation of the Central Bank of The Bahamas, the regulatory reporting required to be submitted to the Central Bank of The Bahamas by the licensees and the penalties that may be imposed for failure to comply with the orders of the Central Bank of The Bahamas. From time to time, the Central Bank issues regulations, guidelines and policies which are available on its website.

The Financial and Corporate Service Providers Act provides regulations for the administration and supervision of all licensed financial and corporate service providers in The Bahamas. This Act details the obligations and duties of a licensee under the Act and sets out the supervisory powers of the Securities Commission over its licensees inclusive of penalties and sanctions for non-compliance.

Financial Intelligence and Reporting

The Financial Intelligence Unit Act provides for the establishment of the financial intelligence unit organization in The Bahamas that is responsible for receiving, analyzing, obtaining and disseminating information which relates to or may relate to the proceeds of offenses under the Proceeds of Crime Act or the Anti-Terrorism Act.

The Financial Transactions Reporting (Amended) Act and Regulations provides the basic requirements applicable to financial institutions in The Bahamas with respect to verifying the identities of facility holders and bank customers, the obligation to report suspicious transactions to the financial intelligence unit, and minimum record retention policies and procedures.

Data Protection (Privacy of Personal Information) Act

This Data Protection (Privacy of Personal Information) Act makes provision for the protection of the privacy of the personal data of individuals and the regulation of its collection, processing, keeping, use and disclosure.

Other Relevant Legislation

Butterfield Trust (Bahamas) Limited is also subject to various other acts and regulations, including the Proceeds of Crime Act, which sets forth that it is a crime in The Bahamas for a person to conceal, transfer or deal with the proceeds of criminal conduct (such as money laundering) and the Anti-Terrorism Act, which sets forth that it is a crime in The Bahamas for a person to provide or collect funds or provide financial services or make such services available to persons with the intention that such funds or services are to be used in full or in part to carry out a terrorist act. In addition to the laws and regulations set forth above, Butterfield Trust (Bahamas) Limited is also obligated to comply with the guidelines released by the Central Bank of The Bahamas from time to time.

Guernsey

Guernsey Financial Services Commission

Our activities in Guernsey are monitored by the Guernsey Financial Services Commission (the "GFSC") through its Probability Risk and Impact System. The primary objective of the GFSC is to regulate and supervise finance businesses in the Bailiwick of Guernsey ("Guernsey," or the "Bailiwick"). Almost all financial service activities in Guernsey are required to be licensed by the GFSC. Once licensed, the businesses are subject to the regulation, oversight, investigatory, information gathering and enforcement powers of the GFSC.

The various divisions of the GFSC perform regular visits with the purpose of understanding the business and reviewing the risk management and internal control environment (including monitoring and any outsourced functions). Such visits also monitor compliance with applicable law and regulation.

In addition to conducting on-site reviews, the GFSC has a continuing duty to determine whether entities it regulates and the persons who own or run them remain fit and proper. Licensees therefore have a statutory obligation to notify the GFSC of various changes, which are set out in comprehensive rules and regulations. The GFSC also requires financial services businesses to submit periodic returns for statistical analysis and inclusion in thematic studies.

The GFSC has wide powers of enforcement to address shortcomings and breaches by financial services businesses. These range from private warnings and reprimands to revocation and suspension of applicable licenses and consents, fines and referral for criminal prosecution, among others.

The Banking Supervision (Bailiwick of Guernsey) Law, 2020

The Banking Supervision (Bailiwick of Guernsey) Law, 2020 (the "BSL") provides that no person in the Bailiwick shall accept a deposit in the course of carrying on, whether in Guernsey or elsewhere, a deposit-taking business except under the authority of and in accordance with the conditions of a license granted by the GFSC. Butterfield Bank (Guernsey) Limited holds a license under the BSL. In order to be granted a license, a company's business must be carried on with prudence, integrity, professional skills and in a manner which will not tend to bring the Bailiwick into disrepute. The business must also be directed by at least two individuals who are resident in the Bailiwick of Guernsey with appropriate standing and experience and sufficiently independent of each other. Businesses must also adhere to codes, principles, rules and instructions issued from time to time.

Regulation of Fiduciaries, Administration Businesses and Company Directors, etc. (Bailiwick of Guernsey) Law 2020

The Regulation of Fiduciaries, Administration Businesses and Company Directors, etc. (Bailiwick of Guernsey) Law 2020 (the "Guernsey Fiduciaries Law") provides that only a person licensed by the GFSC under the Guernsey Fiduciaries Law can operate fiduciary businesses, which includes:

- formation, management and administration of trusts;
- company or corporate administration;
- provision of executorship services; and
- the formation and management of foundations.

The GFSC can grant three different categories of license, including a primary or secondary fiduciary license, which can only be granted to a company or a partnership, and a personal fiduciary license. The primary fiduciary license covers any director, manager, partner or employee acting in the course of their employment.

The Protection of Investors (Bailiwick of Guernsey) Law, 2020

Under the Protection of Investors (Bailiwick of Guernsey) Law, 2020 (the "POI Law"), a person shall not (subject to certain exemptions) carry on, or hold himself out as carrying on, any controlled investment business in or from within the Bailiwick, except under and in accordance with the terms of a license. For the purposes of the POI Law, a controlled investment includes collective investment schemes and general securities and derivatives. All Guernsey domiciled funds have to be authorized by or registered with the GFSC and be administered by a Guernsey licensed administrator. In addition, open-ended funds must also have a Guernsey-licensed custodian.

The Financial Services Commission (Bailiwick of Guernsey) Law, 1987

The Financial Services Commission (Bailiwick of Guernsey) Law, 1987 provides that the general functions of the GFSC are to supervise the finance business in the Bailiwick, to counter financial crime and the financing of terrorism and to maintain confidence in the Bailiwick's reputation as an international finance center.

The Criminal Justice (Proceeds of Crime) (Bailiwick of Guernsey) Law, 1999

The Criminal Justice (Proceeds of Crime) (Bailiwick of Guernsey) Law, 1999 established certain offenses in connection with the proceeds of criminal conduct including concealing or transferring the proceeds of crime, assisting another person to retain the proceeds of criminal conduct, acquisition, possession or use of proceeds of criminal conduct and tipping-off.

The Terrorism and Crime (Bailiwick of Guernsey) Regulations, 2007

The Terrorism and Crime (Bailiwick of Guernsey) Regulations, 2007 provides for a positive obligation on businesses to report internally any suspicions of money laundering. A money laundering reporting officer must be appointed to fulfil this function and to make disclosure to the relevant division of Guernsey's police unit.

Guernsey Banking Deposit Compensation Scheme (Bailiwick of Guernsey) Ordinance, 2008

Pursuant to the Banking Deposit Compensation Scheme (Bailiwick of Guernsey) Ordinance, 2008, a Guernsey DCS is in effect in Guernsey. The Guernsey DCS provides compensation of up to £50,000 per qualifying deposit in the event of the failure of a Guernsey-licensed bank. The maximum total amount of compensation is capped at £100 million in any 5 year period. If claims exceed this cap, compensation will be reduced pro rata. The cap also means that compensation in respect of any one bank cannot exceed £100 million. The Guernsey DCS is paid for by Guernsey banks through an annual administration levy and, in the event of a bank failure, a compensation levy.

Data Protection (Bailiwick of Guernsey) Law, 2017

The Data Protection (Bailiwick of Guernsey) Law, 2017 ("DPL 2017") came into force on May 25, 2018 to coincide with the enforcement of the EU's General Data Protection Regulation (EU) 2016/679. The DPL 2017 updated Guernsey's data protection framework to ensure that Guernsey retained its data protection "adequacy" status with the European Commission.

The DPL 2017 applies to the processing of personal data and provides rights to data subjects (i.e., individuals) and places obligations on data controllers and processors of personal data including, among other matters, in relation to subject access requests, transfers of personal data and notification of data breaches.

The Office of the Data Protection Authority is the independent regulatory authority responsible for the regulatory functions under the DPL 2017, including the ability to levy fines.

Jersey

Butterfield Bank (Jersey) Limited is regulated by the Jersey Financial Services Commission ("JFSC") to carry on deposit-taking business under the Banking Business (Jersey) Law 1991 (as amended); investment business pursuant to the Financial Services (Jersey) Law 1998 (as amended); fund services business pursuant to the Financial Services (Jersey) Law 1998 (as amended); and money service business pursuant to the Financial Services (Jersey) Law 1998 (as amended).

The JFSC uses four key areas in supervising banks which are the development of regulatory requirements including laws and codes of practice; on-site examinations and meetings; off-site supervision including the analysis of financial information; and international dialogue and liaison with other regulators involved in the supervision of the broader group.

The JFSC has wide powers of enforcement to address shortcomings and breaches by financial services businesses. These range from private warnings and reprimands to revocation and suspension of applicable licenses and consents, fines and referral for criminal prosecution, among others.

Financial Services Commission (Jersey) Law 1998

The Financial Services Commission (Jersey) Law 1998 provides that the JFSC is, among other things, responsible for the supervision and development of financial services in or from within Jersey, preparing and submitting recommendations for legislation regarding financial services, supervising regulated entities, and administering laws such as the Control of Borrowing (Jersey) Law 1947 and the Companies (Jersey) Law 1991. It also has particular regard to the reduction of risk to the public of financial loss, to protecting and enhancing the reputation and integrity of Jersey, and to the best economic interests of Jersey and the need to counter financial crime.

Banking Business (Jersey) Law 1991

The Banking Business (Jersey) Law 1991 (the "BBL") provides that no person shall carry on or hold themselves out as carrying on a deposit taking business in or from within Jersey unless they are registered under the BBL. Butterfield Bank (Jersey) Limited holds a license under the BBL. In order to be granted a license, the JFSC will consider the integrity, competence and financial standing of a company's business and that it would be in the best interests of persons who may deposit money that the company should be registered. The business must also have a physical presence in Jersey involving meaningful decision making and management, and be subject to supervision by a relevant supervisory authority. Businesses must adhere to secondary legislation and codes issued from time to time. This law also contains provisions regarding notification of principal persons, key persons and shareholders, and sets out further powers of the JFSC.

Financial Services (Jersey) Law 1998

This law regulates investment, trust company, general insurance mediation, money service, fund services and alternative investment fund services business. It includes requirements to register if carrying on regulated business, provisions for the supervision of financial services (including requirements to notify of changes to principal persons, key persons and shareholders), and gives the JFSC powers to issue directions and public statements, request information, and issue further orders and regulations. It also sets out the offenses of market manipulation, misleading information and insider dealing.

Collective Investment Funds (Jersey) Law 1988

Under the Collective Investment Funds (Jersey) Law, a person shall not (subject to certain exemptions) hold himself out as being a functionary of a recognized fund in or from within Jersey, except under a permit. For the purposes of this law, a recognized fund is a type of collective investment fund subject to additional regulations. Any person carrying on the business of an unclassified fund must also hold a certificate. This law also contains provisions regarding notification of principal persons, key persons and shareholders, and sets out further powers of the JFSC.

Bank (Recovery and Resolution) (Jersey) Law 2017

The Bank (Recovery and Resolution) (Jersey) Law 2017 came into force in 2022 (except provisions in relation to contractual recognition of bail-in, which will be brought into force later). Butterfield Bank (Jersey) Limited is therefore now subject to the recovery and resolution powers, as well as investigatory powers, exercisable by the Jersey Resolution Authority. Butterfield Bank (Jersey) Limited is also subject to the bank winding up procedure set out in this Law, in place of all other existing Jersey law bankruptcy proceedings.

Proceeds of Crime (Jersey) Law 1999 and Terrorism (Jersey) Law 2002

The Proceeds of Crime (Jersey) Law 1999 established certain offenses in connection with the proceeds of criminal conduct including acquiring, using or having possession or control of criminal property, concealing, disguising, converting, transferring or removing such criminal property from Jersey, and tipping off and interference with material.

The Terrorism (Jersey) Law 2002 contains similar offenses regarding using, possessing, providing, collecting or receiving property for the purposes of terrorism, and otherwise dealing with terrorist property.

Both the Proceeds of Crime (Jersey) Law 1999 and the Terrorism (Jersey) Law 2002 provide for a positive obligation on businesses to report any suspicions of money laundering or terrorist financing. The Proceeds of Crime (Jersey) Law 1999 was also amended in 2022 to introduce an offense of failing to prevent money laundering by employees, agents, service providers or customers, as a result of failing to maintain and apply adequate prevention procedures.

Depositors Compensation Scheme, 2009

Pursuant to the Banking Business (Depositors Compensation) (Jersey) Regulations 2009, the Jersey Bank Depositors Compensation Scheme ("Jersey DCS") is in effect in Jersey. The law covers all "eligible deposits" and, in the event of the failure of a Jersey bank, provides protection of up to £50,000 for deposits placed in Jersey per person, per banking group, for local and international depositors. The maximum liability of the Jersey DCS is capped at £100 million in any 5 year period.

Data Protection (Jersey) Law, 2018 / Data Protection Authority (Jersey) Law, 2018

The Data Protection (Jersey) Law 2018 ("DPJL"), and its companion statute the Data Protection Authority (Jersey) Law 2018 ("DPAJL"), came into force on May 25, 2018 to coincide with implementation of the EU General Data Protection Regulation (EU) 2016/679 ("GDPR"). The DPJL updated Jersey's data protection framework expressly to mirror the GDPR and ensure that Jersey retained its data protection "adequacy" status with the European Commission.

In outline, the DPJL governs the processing of personal data in Jersey or in relation to Jersey residents; it provides rights to data subjects (i.e. individuals) and places obligations on data controllers and processors of personal data including, among other matters, in relation to subject access requests, transfers of personal data and notification of data breaches. The DPAJL requires any organization which is "established" in Jersey to be registered with the Jersey Office of the Information Commissioner ("JOIC") and to pay an annual charge.

The JOIC is the independent authority responsible for the regulatory and enforcement functions of the DPJL and DPAJL, including the ability to levy fines.

United Kingdom

Regulatory Regime

Butterfield Mortgages Limited provides UK residential property lending services.

The primary legislation governing the provision of Butterfield UK's services is the Financial Services and Markets Act 2000 ("FSMA") and its secondary regulations. FSMA requires that in order to carry on mortgage and investment services in the UK, a firm must be authorized (or exempt) and have the necessary permissions. Butterfield Mortgages Limited is authorized and has permissions to enter into, advise on and administer regulated mortgage contracts.

Because its permissions are limited to mortgage activities, Butterfield Mortgages Limited is regulated by the FCA. The FCA has responsibility for both prudential and conduct of business regulation of Butterfield Mortgages Limited.

Butterfield Mortgages Limited must comply with the FCA handbook which contains detailed rules and guidance in respect of governance and conduct matters. The FCA's Principles for Business require, among other things, that Butterfield Mortgages Limited conducts its business with integrity and due skill, care and diligence and deal with its regulators in an open and cooperative way. In addition, certain persons occupying senior management functions and certifications at Butterfield Mortgages Limited are subject to statements of principle and a code of practice that describes behaviors expected of persons operating in the regulated sector. Butterfield Mortgages Limited is subject to and has implemented the FCA's Senior Management and Certification Regime, the purpose of which is to increase individual accountability of senior management under the UK regulatory system.

Control

FSMA requires any person seeking to obtain (and in certain circumstances increase) control over Butterfield UK to first get approval from the FCA. A person will become a controller if it holds (itself or with another where they are acting together) (i) 20% or more of the shares of Butterfield UK or in any parent undertaking; or (ii) 20% or more of the voting power in Butterfield UK or any parent.

The Companies Act 2006 requires that UK incorporated companies maintain a register of persons who have significant control over them. A person will be considered to have significant control if it holds (itself or with another where they are acting together) 25% or more of the company's shares or voting rights or has the ability to appoint a majority of the board of directors.

Capital

Butterfield UK is subject to capital rules under the FCA's Prudential sourcebook for Mortgage and Home Finance Firms and Insurance Intermediaries handbook ("MIPRU"). The MIPRU capital rules stipulate the minimum level and quality of capital that must be maintained to support the activities carried on.

AML and Financial Crime

Butterfield UK is subject to a range of legislation at a UK level requiring it to take steps to detect and prevent potential money laundering, financial crime or terrorist financing. The FCA and HM Treasury have investigatory powers in relation to suspected breaches.

The principal UK anti-money laundering legislation applicable to the regulated activities of Butterfield UK is The Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (as amended) ("MLRs 2017") from June 26, 2017. The MLRs 2017 prescribed obligations in relation to know your customer (KYC) information and assessment as well as ongoing monitoring obligations.

Further, Butterfield UK must comply with its obligations under the Proceeds of Crime Act 2002, the Terrorism Act 2000, the Anti-terrorism, Crime and Security Act 2001, the Counter-Terrorism Act 2008 (Schedule 7), certain specific obligations under the Transfer of Funds (Information on the Payer) Regulations 2007 and certain specific obligations in FSMA (in particular with respect to market abuse and insider dealing) and the FCA Handbook. Together, this legislation requires regulated firms to create appropriate and risk-sensitive policies and procedures in relation to customer due diligence procedures and monitoring of transactions, to avoid financing terrorism or money laundering or facilitating either of these, to avoid dealing with certain persons specified by HM Treasury, and to disclose suspicious activity to the relevant regulatory authorities. In addition, the UK and all entities of the Bank must adhere to the Bribery Act 2010 which has broad extra-territorial reach.

Butterfield UK must also comply with legislation of third countries to the extent that such legislation has extra-territorial effect and is applicable to it. Examples of this are the US PATRIOT Act of 2001 and The Foreign Account Tax Compliance Act ("FATCA") of 2010.

Data Protection Act, 2018

The Data Protection Act 2018 ("DPA") implements the EU General Data Protection Regulation (2016/679). Butterfield UK is required to have in place compliant policies and procedures to meet the DPA obligations to deal with data appropriately. The DPA applies to any business or person using or holding personal data on individuals within the EU and UK. Breaches of the legislation are criminal offenses and can result in severe penalties. The Information Commissioner's Office has regulatory and disciplinary powers and breach of the DPA can give rise to financial penalties based on a percentage of annual turnover.

Following the UK leaving the EU on January 31, 2020, the GDPR is incorporated into the UK's domestic law under The European Union (Withdrawal Agreement) Act 2020 that makes legal provision for ratifying the Brexit Withdrawal Agreement of January 24, 2020 and implementing it into the domestic law of the United Kingdom.

Switzerland

Financial Institutions Act

The Swiss Federal Financial Institutions Act ("FinIA") and the implementing ordinance to the Swiss Federal Financial Institutions Act ("FinIO") entered into force on January 1, 2020. FinIA and FinIO set forth the basic provisions relating to the licensing in Switzerland of financial institutions, which includes trustees and (collective) asset managers but excludes banks and insurance companies as they are already subject to specific legislation. Pursuant to FinIA, Swiss trustees acting on a professional basis in Switzerland or from Switzerland, must obtain a license from the Swiss Financial Market Supervisory Authority ("FINMA") to carry on their trustee activities. A Swiss branch or a Swiss representative office of a foreign trustee must also obtain a license from FINMA.

FINMA is responsible for granting the license and for taking any enforcement actions. In order to obtain a license from FINMA, a trustee will first need to affiliate to a Supervisory Organization, which is licensed and supervised by FINMA. The Supervisory Organization will conduct the day-to-day supervision and perform regular audits of the affiliated trustees. In order to obtain a license, the applicant must further, inter alia, comply with minimum capital requirements, have an appropriate level of own funds, an appropriate organization, qualified executives and generally meet a "fit and proper" requirement.

In accordance with the obligations for existing trustees under FinIA, Butterfield Trust (Switzerland) Ltd complies with the licensing requirements as set forth under FinIA, is affiliated to a Supervisory Organization (see below under Swiss Anti-Money Laundering Act) and has submitted its application for authorization with FINMA before December 31, 2022. In accordance with the transitional provisions under FinIA, Butterfield Trust (Switzerland) Ltd may continue to provide trustee services until FINMA has made a decision concerning authorization, provided it remains affiliated to a Self-Regulatory Organization or a Supervisory Organization for anti-money laundering compliance purposes.

Swiss Anti-Money Laundering Act

The Swiss Federal Act on Combating Money Laundering and Terrorist Financing of 10 October 1997 ("AMLA") and the related implementing ordinances apply to financial intermediaries, which include trustees. It governs the combating of money laundering and terrorist financing. It ensures the exercise of due diligence by the financial institutions in the conduct of financial transactions. Pursuant to AMLA, financial institutions must affiliate to a recognized Self-Regulatory Organisation or a recognized Supervisory Organisation (see above under Financial Institutions Act) which shall supervise compliance by financial intermediaries of their duties set out in AMLA. Butterfield Trust (Switzerland) Ltd must comply with its obligations under AMLA and is currently affiliated to Organisme de Surveillance pour Intermédiaires Financiers & Trustees ("SO-FIT"), a Supervisory Organisation licensed and supervised by FINMA.

Swiss Data Protection Act

The Swiss Federal Act on Data Protection of June 19, 1992 ("DPA") and the Ordinance to the Federal Data Protection of June 14, 1993 ("DPO") aim to protect the privacy and the fundamental rights of persons when their data is processed. The DPA and DPO provide for several requirements and limits with respect to data processing in Switzerland as well as the transfer of data outside Switzerland. The data protection legislation applies to any private entity processing data related to individuals or corporate entities. Data processing is defined as any operation with personal data, irrespective of the means applied and the procedure, and in particular the collection, storage, use, revision, disclosure, archiving or destruction of data. The DPA and DPO impose a series of duties on the so-called controller of the database, i.e. the entity that defines the

purpose and controls the content of the collected data. The activities of Butterfield Trust (Switzerland) Ltd imply data processing on various data subjects. As a result, it is to comply with the provisions of the DPA when processing data.

The general principles of the Swiss data protection legislation include the obligations to lawfully, accurately and not excessively process data. Further, data processing must be protected by appropriate technical and organizational measures against accidental destruction, loss, theft and any other unauthorized use. The persons or entities whose data are being processed must be granted a right of access to their data if they request so and must have the opportunity to request the correction of the data that is inaccurate.

On September 25, 2020, the Swiss Parliament adopted the revision of the DPA. The Federal Council has decided that the revised DPA will enter into force on September 1, 2023. The revised DPA provides for strengthened individuals' rights, increased transparency in data processing activities and extended governance and process rules for data controllers. The revised DPA also provides for increased fines for violation of duties under the revised DPA. The revisions further bring the DPA more in line with the EU General Data Protection Regulation (EU 2016/679), so that Switzerland may uphold its status as a country adequately protecting personal data from an EU perspective.

Singapore

Butterfield Trust (Asia) Limited holds a trust business license issued by the Monetary Authority of Singapore ("MAS") pursuant to the Trust Companies Act 2005 ("TCA").

As the integrated financial services regulatory authority in Singapore, the MAS administers (among other financial services related statutes) the TCA and regulates and supervises (among other types of financial institutions) trust business license holders (such as Butterfield Trust (Asia) Limited) in accordance with the TCA and all related subsidiary legislation, notices, guidelines and other regulatory instruments issued by the MAS ("MAS Instruments"). These MAS Instruments cover a wide range of ongoing obligations relating to, inter alia, capital adequacy, audit, conduct of business, confidentiality, anti-money laundering and countering of terrorist financing and also impose approval and/or notification requirements in respect of controllers, directors and key officers.

Under the TCA, the MAS is empowered to conduct inspections and/or investigations of Butterfield Trust (Asia) Limited to ensure that it is in compliance with requirements contained in the MAS Instruments. Where there is a breach, the MAS may pursue a wide range of enforcement sanctions, including private warnings, private or public reprimands, composition offers (i.e., allowing the offense to be compounded by payment of a fine), prohibition orders, suspension or revocation of licenses, civil penalties and criminal prosecution.

United States

Foreign Account Tax Compliance Act (FATCA)

Under FATCA, US federal tax legislation passed in 2010, a 30% withholding tax will be imposed on "withholdable payments" made to non-US financial institutions (including non-US investment funds and certain other non-US financial entities) that fail (or, in some cases, that have 50% affiliates which are also non-US financial institutions that fail) to provide certain information regarding their US accountholders and/or certain US investors (such as US accountholders and US investors, "US accountholders") to the IRS. For non-US financial institutions that fail to comply, this withholding will generally apply without regard to whether the beneficial owner of a withholdable payment is a US person or would otherwise be entitled to an exemption from US federal withholding tax. "Withholdable payments" generally include, among other items, payments of US-source interest and dividends. Furthermore, FATCA may also impose withholding on non-US source payments by non-US financial institutions that comply with FATCA to non-US financial institutions that fail to comply with FATCA. However, under proposed Treasury regulations, such withholding will not apply to payments made before the date that is two years after the date on which final regulations defining the term "foreign pass thru payment" are published. In general, non-publicly traded debt and equity interests in investment vehicles will be treated as "accounts" and be subject to these reporting requirements. In addition, certain insurance policies and annuities are considered accounts for these purposes.

Some countries, including the Cayman Islands, Guernsey, Jersey, the UK, Singapore, Switzerland and The Bahamas, have entered into, and other countries are expected to enter into, intergovernmental agreements ("IGAs") with the United States to facilitate the type of information reporting required under FATCA. While the existence of IGAs will not eliminate the risk of the withholding described above, these agreements are expected to reduce that risk for financial institutions and investors in countries that have entered into IGAs. IGAs will often require financial institutions in those countries to report some information on their US accountholders to the taxing authorities of those countries, which will then pass the information to the IRS.

The Group closely monitors all present and new legislation that is or will be applicable for its organization, and is continuing to monitor all implications of FATCA and legislation of countries that have entered into IGAs. While monitoring these implications, the Group is and will be in close contact with all of its stakeholders, including its peers and financial industry representative organizations.

The Group has taken all the steps it believes are necessary to comply with current FATCA regulations, including analysis of its group entities and conclusions as to their FATCA classifications, entering into agreements with the US tax authorities (as necessary), identification of reportable accounts, and timely and accurate filing of all required annual FATCA filings, all in accordance with the appropriate IGA. Certain payments to the Group may be subject to withholding under FATCA if, in the future, the Group cannot enter into such agreements or satisfy the requirements thereunder (including as a result of local laws in non-IGA countries prohibiting information-sharing with the IRS, as a result of contracts or local laws prohibiting withholding on certain payments to account holders, policyholders, annuitants or other investors, or as a result of the failure of account holders, policyholders, annuitants or other investors to provide requested information). The possibility of such withholding and the need for US account holders, policyholders, annuitants and investors to provide certain information may adversely affect the sales of certain of the Group's products. In addition, entering into agreements with the IRS and compliance with the terms of such agreements and with FATCA and any regulations or other guidance promulgated thereunder or any legislation promulgated under an IGA may substantially increase the Group's compliance costs.

Office of Foreign Assets Control Regulation

The US Treasury Department's Office of Foreign Assets Control ("OFAC"), administers and enforces economic and trade sanctions against targeted foreign countries and regimes, under authority of various laws, including designated foreign countries, nationals and others. OFAC publishes lists of specially designated targets and countries. OFAC sanctions apply to all transactions that take place in the United States. Transactions that take place outside the United States may become subject to the jurisdiction of the United States and subject to compliance with OFAC sanctions if they involve US persons or payment in US dollars. Such payments typically are cleared through the US Dollar settlement system located in the United States and involve the intermediation of US financial institutions. Although we currently do not have any operations in the United States, our operations may involve transactions with US persons or in US Dollars and as a result, in order to comply with OFAC sanctions, we are responsible for, among other things, blocking any such transactions with designated targets and countries and reporting blocked transactions after their occurrence. Failure to comply with these sanctions could have serious legal and reputational consequences, including causing applicable bank regulatory authorities not to approve merger or acquisition transactions when regulatory approval is required or to prohibit such transactions even if approval is not required.

Anti-Money Laundering and the USA PATRIOT Act

A major focus of worldwide governmental policy on financial institutions in recent years has been aimed at combating money laundering and terrorist financing. In particular, United States anti-money laundering laws and regulations including the USA PATRIOT Act of 2001, and the Anti-Money Laundering Act of 2020 ("2020 AMLA"), applicable to non-US banks with operations in the United States, including banks that engage in transactions outside the United States with US persons or in US Dollars, such as the Bank, impose significant compliance and due diligence obligations.

Under these laws and regulations, financial institutions are prohibited from entering into specified financial transactions and account relationships and must use enhanced due diligence procedures in their dealings with certain types of high-risk customers and implement a written customer identification program. Financial institutions must also take certain steps to assist government agencies in detecting and preventing money laundering and report certain types of suspicious transactions. Regulatory authorities routinely examine financial institutions for compliance with these obligations, and failure of a financial institution to maintain and implement adequate programs to combat money laundering and terrorist financing, or to comply with all of the relevant laws or regulations, could have serious legal and reputational consequences for the institution, including causing applicable bank regulatory authorities not to approve merger or acquisition transactions when regulatory approval is required or to prohibit such transactions even if approval is not required. Institutions that violate these obligations can be subject to cease and desist orders, civil money penalties and criminal sanctions.

Moreover, the 2020 AMLA requires the U.S. Treasury Department to issue National Anti-Money Laundering and Countering the Financing of Terrorism Priorities, conduct studies and issue regulations that may, over the next few years, significantly alter some of the due diligence, recordkeeping and reporting requirements that may be imposed on financial institutions. The 2020 AMLA also expands the US Department of Justice's subpoena authority with respect to any foreign bank that maintains a correspondent account in the US, increases penalties for violations of US anti-money laundering laws and significantly expands a whistleblower award program, which could increase the prospect of regulatory enforcement. Many of the statutory provisions in the 2020 AMLA will require additional rulemakings, reports and other measures, and the impact of the 2020 AMLA will depend on, among other things, rulemaking and implementation guidance. In June 2021, the Financial Crimes Enforcement Network of the US Treasury Department issued the required priorities, which include: corruption, cybercrime, terrorist financing, fraud, transnational crime, drug trafficking, human trafficking and proliferation financing.

Future Legislation and Regulation

The above jurisdictions and the other jurisdictions in which we operate may enact legislation from time to time that affects the regulation of the financial services industry or that affect the regulation of financial institutions chartered by or operating in those jurisdictions. These governments and their regulatory agencies also periodically propose and adopt changes to their regulations or change the manner in which existing regulations are applied. The substance or impact of pending or future legislation or regulation, or the application thereof, cannot be predicted, although enactment of the proposed legislation could impact the regulatory structure under which we operate and may significantly increase our costs, impede the efficiency of our internal business processes, require us to increase our regulatory capital and modify our business strategy, and limit our ability to pursue business opportunities in an efficient manner. Our business, financial condition, results of operations or prospects may be adversely affected, perhaps materially, as a result.

Additional Information

The Butterfield Act and our current amended and restated bye-laws have been filed as exhibits to this annual report on Form 20-F. The information contained in these exhibits is incorporated by reference herein.

Information regarding the rights, preferences and restrictions attaching to each class of our common and preferred shares, as well as other information regarding director and shareholder rights and proceedings, is described in the section entitled "Description of Share Capital" in our registration statement on Form F-1 filed with the SEC on February 12, 2017 with the file number 333-216018 and incorporated by reference herein.

C. Organizational Structure

Refer to Item 4.B. "Business Overview".

D. Property, Plants and Equipment

Our corporate headquarters is located at 65 Front Street, Hamilton HM 12, Bermuda. In addition to our corporate headquarters we also maintain offices in the Cayman Islands, Guernsey, Jersey, the UK, The Bahamas, Switzerland, Singapore, Mauritius and Canada. Additionally, we operate three branch locations in Bermuda and four branch locations in the Cayman Islands. Premises are owned in Bermuda and the Cayman Islands, with the remainder being held under commercial leases.

E. Selected Statistical Data

The following tables present select statistical information as required by the new subpart 1400 of Regulation S-K (previously Industry Guide 3).

Distribution of Assets, Liabilities and Shareholders' Equity; Interest Rates and Interest Differential

Average Balance Sheet and Interest Rates

The following table presents average consolidated balance sheets and net interest income for the years indicated:

(in millions of \$)	For the year ended December 31								
	2022			2021			2020		
	Average balance	Interest income (expense)	Average yield/ rate	Average balance	Interest income (expense)	Average yield/ rate	Average balance	Interest income (expense)	Average yield/ rate
Assets									
Cash and cash equivalents — Interest bearing	1,903.9	19.8	1.04 %	2,615.4	0.5	0.02 %	2,481.6	7.2	0.29 %
Securities purchased under agreement to resell	118.2	2.5	2.12 %	148.1	0.9	0.60 %	132.7	1.4	1.04 %
Short-term investments	1,110.6	10.9	0.98 %	1,208.7	0.1	0.01 %	916.4	3.6	0.39 %
Available-for-sale	2,581.8	38.9	1.51 %	3,105.4	48.4	1.56 %	2,346.3	50.6	2.15 %
Held-to-maturity	3,476.3	76.9	2.21 %	2,587.8	53.5	2.07 %	2,166.2	58.6	2.70 %
Investment in securities ⁽¹⁾	6,058.1	115.8	1.91 %	5,693.2	101.9	1.79 %	4,512.5	109.2	2.41 %
Commercial loans	1,477.5	76.7	5.19 %	1,585.8	72.1	4.55 %	1,693.1	83.9	4.94 %
Consumer loans	3,616.0	172.7	4.78 %	3,614.0	149.5	4.14 %	3,368.6	146.8	4.34 %
Total loans, net of allowance for credit losses ⁽²⁾	5,093.5	249.4	4.90 %	5,199.9	221.5	4.26 %	5,061.7	230.7	4.54 %
Interest-earning assets	14,284.3	398.4	2.79 %	14,865.3	324.9	2.19 %	13,104.9	352.0	2.68 %
Other assets	370.3			367.4			395.4		
Total assets	14,654.6			15,232.7			13,500.3		
Liabilities									
Deposits	10,269.1	(45.2)	(0.44)%	10,845.3	(15.5)	(0.14)%	9,710.8	(25.1)	(0.26)%
Securities sold under agreement to repurchase	0.6	—	(3.95)%	—	—	— %	—	—	— %
Long-term debt	172.1	(9.6)	(5.58)%	171.7	(9.6)	(5.59)%	173.4	(9.3)	(5.35)%
Interest bearing liabilities	10,441.8	(54.8)	(0.52)%	11,016.9	(25.1)	(0.23)%	9,884.2	(34.4)	(0.35)%
Non-interest bearing current accounts	3,033.3			2,895.0			2,363.9		
Other liabilities	284.3			295.1			280.6		
Total liabilities	13,759.3			14,207.0			12,528.6		
Shareholders' equity	895.3			1,025.7			971.7		
Total liabilities and shareholders' equity	14,654.6			15,232.7			13,500.3		
Non-interest bearing funds net of non-interest-earning assets (free balance)	3,842.5			3,848.4			3,220.7		
Net interest margin		343.6	2.41 %		299.8	2.02 %		317.6	2.42 %
Net interest spread			2.32 %			1.95 %			2.33 %
Ratio of average interest earning asset/ interest bearing liabilities			136.8 %			134.9 %			132.6 %

⁽¹⁾ Yields are based on average historical costs and yields on securities held in income tax exempt jurisdictions are not computed on a tax-equivalent yield basis.

⁽²⁾ Interest income and rates on loans include loan fees (December 31, 2022: \$6.3 million; December 31, 2021: \$7.0 million and December 31, 2020: \$6.3 million). Additionally, average non-accrual loans were included in the average loan balances used to determine the average yield on loans in all of the periods presented. Interest income on non-accrual loans is recognized only to the extent it is received in cash. See "Note 2: Significant accounting policies" of our audited consolidated financial statements for further information.

Analysis of Changes in Volume and Rate on Interest Income and Interest Expense

The following table presents the amount of changes in interest income and interest expense from December 31, 2021 to December 31, 2022 and from December 31, 2020 to December 31, 2021, due to changes in both average volume and average rate. Changes not solely due to volume or rate have been allocated to volume.

(in millions of \$)	2022 compared to 2021			2021 compared to 2020		
	Increase/ (Decrease) due to Changes in		Net Increase/ (Decrease)	Increase/ (Decrease) due to Changes in		Net Increase/ (Decrease)
	Volume	Rate		Volume	Rate	
Interest income related to:						
Cash and cash equivalents — Interest bearing	(7.45)	26.75	19.30	0.04	(6.74)	(6.70)
Securities purchased under agreement to resell	(0.65)	2.25	1.60	0.09	(0.59)	(0.50)
Short-term investments	(0.98)	11.78	10.80	(0.01)	(3.49)	(3.50)
Available-for-sale	(7.91)	(1.59)	(9.50)	11.74	(13.94)	(2.20)
Held-to-maturity	19.68	3.72	23.40	8.61	(13.71)	(5.10)
Total investment in securities⁽¹⁾	11.77	2.13	13.90	20.35	(27.65)	(7.30)
Commercial loans	(5.67)	10.27	4.60	(5.07)	(6.73)	(11.80)
Consumer loans	0.09	23.11	23.20	9.76	(7.06)	2.70
Total loans, net of allowance for credit losses⁽²⁾	(5.58)	33.38	27.80	4.69	(13.79)	(9.10)
Total interest-earning assets	(2.89)	76.29	73.40	25.16	(52.26)	(27.10)
Interest expenses related to:						
Deposits	2.53	(32.23)	(29.70)	(1.61)	11.21	9.60
Long-term debt	(0.02)	0.02	—	0.13	(0.43)	(0.30)
Total interest bearing liabilities	2.51	(32.21)	(29.70)	(1.48)	10.78	9.30
Change in net interest income	(0.38)	44.08	43.70	23.68	(41.48)	(17.80)

⁽¹⁾ Yields are based on average historical costs and yields on securities held in income tax exempt jurisdictions are not computed on a tax-equivalent yield basis.

⁽²⁾ Interest income and rates on loans include loan fees (December 31, 2022: \$6.3 million; December 31, 2021: \$7.0 million and December 31, 2020: \$6.3 million). Additionally, average non-accrual loans were included in the average loan balances used to determine the average yield on loans in all of the periods presented.

Investment Portfolio

The following table presents an analysis of the weighted average yields for interest bearing debt securities that are not held at fair value through earnings as at December 31, 2022:

	Remaining term to maturity					Total
	Within 1 year	1 to 5 years	After 5 through 10 years	After 10 years	No specific or single maturity	
Available-for-sale						
US government and federal agencies	0.24 %	1.09 %	1.26 %	— %	2.51 %	1.77 %
Non-US governments debt securities	4.80 %	0.53 %	— %	— %	— %	0.90 %
Asset-backed securities - Student loans	— %	— %	— %	— %	1.69 %	1.69 %
Residential mortgage-backed securities	— %	— %	— %	— %	3.22 %	3.22 %
Weighted average yield⁽¹⁾	0.85 %	0.93 %	1.26 %	— %	2.52 %	1.68 %
Held-to-maturity						
US government and federal agencies	— %	— %	— %	— %	2.51 %	2.51 %
Weighted average yield⁽¹⁾	— %	— %	— %	— %	2.51 %	2.51 %
Total Weighted average yield⁽¹⁾	0.85 %	0.93 %	1.26 %	— %	2.51 %	2.20 %

⁽¹⁾ Yields are based on average historical costs and yields on securities held in income tax exempt jurisdictions are not computed on a tax-equivalent yield basis.

Loan Portfolio

Maturity Profile of the Loan Portfolio

The following table presents certain items in our loan portfolio by contractual maturity as at December 31, 2022:

(in millions of \$)	Remaining term to average contractual maturity					Total
	Within 1 year	1 to 5 years	After 5 years through 15 years	After 15 years	No specific maturity ⁽¹⁾	
Commercial loans						
Government	2.7	—	278.9	—	—	281.6
Commercial and industrial	73.6	177.4	78.1	—	—	329.1
Commercial overdrafts	124.6	—	—	—	—	124.6
Total Commercial loans	200.9	177.4	357.0	—	—	735.3
Commercial real estate loans						
Commercial mortgage	29.7	107.7	474.4	8.0	—	619.8
Construction	—	2.5	2.0	2.9	—	7.4
Total Commercial real estate loans	29.7	110.2	476.4	10.9	—	627.2
Consumer loans						
Automobile financing	1.0	18.9	0.9	—	—	20.8
Credit card	77.7	—	—	—	—	77.7
Overdrafts	44.4	—	—	—	—	44.4
Other consumer	17.3	20.5	16.4	3.2	—	57.4
Total Consumer loans	140.4	39.4	17.3	3.2	—	200.3
Total Residential mortgages	422.6	1,150.3	754.0	1,243.3	—	3,570.2
Non-interest bearing items without a contractual maturity⁽¹⁾	—	—	—	—	(11.6)	(11.6)
Total	793.6	1,477.3	1,604.7	1,257.4	(11.6)	5,121.4

The following table presents our loan portfolio by maturity and type of interest as at December 31, 2022:

(in millions of \$)	Remaining term to average contractual maturity					Total
	Within 1 year	1 to 5 years	After 5 years through 15 years	After 15 years	No specific maturity ⁽¹⁾	
Loans with fixed interest rates:						
Commercial loans	0.2	14.1	333.3	—	—	347.6
Commercial real estate loans	4.2	55.4	273.1	4.9	—	337.6
Consumer loans	2.2	2.5	2.5	2.5	—	9.7
Residential mortgages	129.8	594.9	252.7	543.1	—	1,520.5
Total Loans with fixed interest rates	136.4	666.9	861.6	550.5	—	2,215.4
Loans with floating or adjustable interest rates:						
Commercial loans	200.7	163.2	23.8	—	—	387.7
Commercial real estate loans	25.6	54.8	203.2	6.0	—	289.6
Consumer loans	138.1	37.0	14.8	0.7	—	190.6
Residential mortgages	292.8	555.4	501.3	700.2	—	2,049.7
Total loans with floating or adjustable interest rates	657.2	810.4	743.1	706.9	—	2,917.6
Non-interest bearing items without a contractual maturity⁽¹⁾	—	—	—	—	(11.6)	(11.6)
Total loans	793.6	1,477.3	1,604.7	1,257.4	(11.6)	5,121.4

⁽¹⁾Included here are items without a contractual maturity such as deferred loans fees and fair value adjustments.

Credit Ratios

The following table presents our credit ratios for the years indicated:

(in millions of \$)	For the year ended December 31		
	2022	2021	2020
Allowance for credit losses to total loans outstanding:			
Allowance for credit losses	25.0	28.1	34.1
Total loans outstanding	5,121.4	5,268.7	5,194.9
	0.5 %	0.5 %	0.7 %
Non-accrual loans to total loans outstanding:			
Non-accrual loans	63.1	61.0	72.5
Total loans outstanding	5,121.4	5,268.7	5,194.9
	1.2 %	1.2 %	1.4 %
Allowance for credit losses to non-accrual loans:			
Allowance for credit losses	25.0	28.1	34.1
Non-accrual loans	63.1	61.0	72.5
	39.6 %	46.0 %	47.0 %
Net charge-offs (recoveries) during the period to average loans outstanding:			
Commercial loans			
Net charge-offs (recoveries) during the period	1.3	0.0	3.6
Average amount outstanding	741.4	758.1	852.9
	0.18 %	0.01 %	0.42 %
Commercial real estate loans			
Net charge-offs (recoveries) during the period	0.0	0.0	0.0
Average amount outstanding	647.3	747.0	750.3
	— %	— %	— %
Consumer loans			
Net charge-offs (recoveries) during the period	1.6	-0.1	0.6
Average amount outstanding	195.7	211.1	228.2
	0.80 %	(0.05)%	0.28 %
Residential Mortgages			
Net charge-offs (recoveries) during the period	2.7	2.5	1.7
Average amount outstanding	3,514.8	3,516.9	3,260.1
	0.08 %	0.07 %	0.05 %
Total loans			
Net charge-offs (recoveries) during the period	5.5	2.5	5.9
Average amount outstanding	5,093.5	5,199.9	5,061.7
	0.11 %	0.05 %	0.12 %

Allowance for credit losses to loans outstanding remained flat at 0.5% in 2022 and 2021.

Non-accrual loans to total loan outstanding ratio remained flat at 1.2% in 2022 from 2021.

Net charge-off (recoveries) ratio increased from 0.05% to 0.11% in 2022 from 2021 mainly due to a charge-off on a commercial facility in Bermuda.

Allocation of the Allowance for Credit Losses

(in millions of \$)	December 31, 2022	
	Amount	Percent of loans in each category to total loans
Balance at End of Period Applicable to:		
Commercial	12.1	14 %
Commercial real estate	0.9	12 %
Consumer	2.7	4 %
Residential Mortgage	9.2	70 %
	25.0	100 %

See "Note 6: Loans" to our audited consolidated financial statements as at December 31, 2022 for the breakdown of allowance for credit losses by each loan category.

Deposits

The following table presents our deposits by category for the years indicated:

(in millions of \$)	For the year ended December 31					
	2022		2021		2020	
	Average balance	Average rate	Average balance	Average rate	Average balance	Average rate
Interest bearing deposits						
Bermuda						
Demand	2,120.7	(0.01)%	2,151.8	(0.02)%	1,879.8	(0.03)%
Term	658.5	0.89 %	654.5	0.52 %	961.3	0.90 %
Total Bermuda	2,779.2		2,806.3		2,841.1	
Non-Bermuda						
Demand	5,308.4	0.18 %	5,853.8	(0.04)%	5,190.0	0.02 %
Term	2,181.5	1.35 %	2,185.2	0.68 %	1,679.7	0.96 %
Non-Bermuda	7,489.9		8,039.0		6,869.7	
Total interest bearing deposits	10,269.1		10,845.3		9,710.8	
Non-interest bearing demand deposits						
Bermuda	1,878.8		1,810.0		1,511.5	
Non-Bermuda	1,154.5		1,085.0		852.4	
Total non-interest bearing deposits	3,033.3		2,895.0		2,363.9	

The following table presents the amount of uninsured deposits by reportable segment:

(in millions of \$)	As at December 31	
	2022	2021
Bermuda ⁽¹⁾	4,252.6	4,274.5
Cayman ⁽²⁾	4,292.8	4,612.0
Channel Islands and the UK ⁽³⁾⁽⁴⁾	4,161.9	4,702.8
	12,707.3	13,589.3

⁽¹⁾ The Bermuda Deposit Insurance Scheme covers only BMD deposits up to a maximum of \$25,000 per group of depositor relationships. Eligibility is limited to individuals; sole proprietors; partnerships; unincorporated associations; charities; and companies registered in the Register of Small Businesses maintained by the Bermuda Economic Development Corporation.

⁽²⁾ Cayman currently has no deposit insurance scheme in place.

⁽³⁾ The Guernsey DCS covers deposits up to a maximum of £50,000 per qualifying claimant which is defined as a natural person; the trustee of a Guernsey Retirement Annuity Trust; the executor or administrator of a deceased person's estate; or a Guernsey-registered charity. The total amount of compensation is capped at £100 million in any 5-year period. Claims exceeding this cap will be reduced pro rata.

⁽⁴⁾ The Jersey DCS covers deposits up to a maximum of £50,000 per qualifying depositor per Jersey banking group. Qualifying depositors are defined as private individuals and charities. The total amount of compensation is capped at £100 million in any 5-year period.

The following table presents the amount of uninsured time deposits by reportable segment and time to maturity as at December 31, 2022:

(in millions of \$)	Remaining term to contractual maturity				Total
	Within 3 months	3 to 6 months	6 to 12 months	Over 12 months	
<i>Time deposits in excess of insured limit:</i>					
Bermuda	29.2	10.8	19.6	35.9	95.5
Channel Islands and the UK	138.9	36.5	11.4	—	186.8
Total time deposits in excess of insured limit	168.1	47.3	31.0	35.9	282.3
<i>Time deposits in uninsured accounts:</i>					
Bermuda	339.1	107.0	104.5	19.4	570.0
Cayman	504.3	74.5	62.5	9.9	651.2
Channel Islands and the UK	1,077.6	185.6	263.1	—	1,526.3
Total time deposits in uninsured accounts	1,921.0	367.1	430.1	29.3	2,747.5
Total uninsured time deposits	2,089.1	414.4	461.1	65.2	3,029.8

ITEM 4A: UNRESOLVED STAFF COMMENTS

None.

ITEM 5: OPERATING AND FINANCIAL REVIEW AND PROSPECTS

A. Operating Results

Management's Discussion and Analysis of Financial Condition and Results of Operations

This section presents management's perspective on our financial condition and results of operations. The following discussion and analysis is intended to highlight and supplement data and information presented elsewhere in this report, including the consolidated financial statements and related notes and should be read in conjunction with the accompanying tables and our financial statements included in this report. The consolidated financial statements and notes have been prepared in accordance with GAAP. Certain statements in this discussion and analysis may be deemed to include "forward-looking statements" and are based on management's current expectations and are subject to uncertainty and changes in circumstances. Forward-looking statements are not historical facts but instead represent only management's belief regarding future events, many of which by their nature are inherently uncertain and outside of management's control. Actual results may differ materially from those included in these statements due to a variety of factors, including worldwide and local economic conditions, success in business retention and obtaining new business and other factors. Factors that could cause these differences are discussed in the sections titled "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors." For management's considerations and determinations of each non-core item discussed, please see "Reconciliation of Non-GAAP Financial Measures".

Overview

We are a full service bank and wealth manager headquartered in Hamilton, Bermuda. We operate our business through our four reportable segments, three geographical and one other: Bermuda, the Cayman Islands, the Channel Islands and the UK and Other. We offer banking services, comprising of retail and corporate banking, and wealth management, which consists of trust, private banking, and asset management. In our Bermuda and Cayman Islands segments, we offer retail banking and wealth management. In our Channel Islands and the UK segment, we offer corporate banking, wealth management and residential property lending. The Other segment includes our operations in the jurisdictions of The Bahamas, Canada, Mauritius, Singapore and Switzerland. In these jurisdictions we either provide wealth management or operate service centers. These jurisdictions individually and collectively do not meet the quantitative threshold for segmented reporting and are therefore aggregated as a non-reportable operating segment.

The following table details our Net Revenue in total and by segment, as well as our total assets, total loans, total deposits, total AUA (which includes trust and custody AUA) and AUM for the years ended December 31, 2022, December 31, 2021 and December 31, 2020.

	For the year ended December 31		
	2022	2021	2020
Net Revenue			
% of Net Revenue from:			
Bermuda segment	43.8%	45.2%	47.6%
Cayman Islands segment	32.1%	29.1%	29.1%
Channel Islands and the UK segment	18.9%	20.3%	20.4%
Other segment	5.3%	5.4%	2.9%
(in millions of \$)			
Summary Balance Sheet			
Total Assets	14,306.1	15,335.2	
Total Loans	5,096.4	5,240.7	
Total Deposits	12,991.1	13,870.2	
Assets under administration			
Custody and other administration services	32,181.7	36,757.6	
Trust	106,154.6	106,362.3	
Assets under management			
Butterfield Funds	1,752.5	1,757.6	
Other assets under management	3,296.3	3,740.2	

Market Environment

Our business is affected by international, regional and local economic conditions as well as the perception of future economic prospects. The significant macro-economic factors that impact our business include the US and global economic landscapes, unemployment rates, the housing markets and interest rates. As the year 2022 began, most market participants and central bankers believed that the inflationary pressures which began in 2021 would prove to be a temporary offshoot of COVID-19 related supply chain disruptions. As the year progressed, it became more clear that other forces, namely, both fiscal and monetary stimulus during the pandemic were fuelling more persistent aggregate demand and with it, continued inflationary pressures. Central banks responded by raising short term interest rates across the globe at a pace far more significant than had been anticipated by markets earlier in the year. As a result, the US bond market, in particular, logged its worst price performance in over 40 years with the 10-year treasury rate rising approximately 230 bps over the course of 2022. The US Federal Reserve raised its overnight target rate by a total of 425 bps, is engaged in quantitative tightening, and is signalling another +50-75 bps of rate hikes in the early part of 2023 to combat inflation. The impact of this monetary austerity is being felt throughout all types of financial assets and across all markets.

Bermuda Segment

Bermuda continues to recover from the pandemic, growing at an estimated 5.8% in 2021 but is projected to have grown at a slower pace in 2022, with most estimated forecasts at less than 2.0%. This can largely be attributed to an imbalance across sectors of the economy. International business, especially the reinsurance and captive

insurance markets, continues to grow attracting billions in new capital. New company formations also continues to climb. Bermuda remains the world's largest captive domicile and the third largest market for reinsurance underwriting as well as by far and away the largest market for insurance-linked securities. However, recovery for small- and medium-sized local enterprises has been sluggish. Retail activity is still well short of 2019 levels. Online sales remain a headwind and a good portion can be attributed to a slower than expected recovery in the hospitality sector. Guest visitor numbers have been constrained by less than ideal airlift capacity and, until recently, COVID-19 testing for visitors. The largest hotel (650 rooms) remains offline pending redevelopment and another large resort remains closed pending a sale. Tourism numbers are expected to continue to improve in 2023 with no testing requirements and a fuller schedule of cruise ship arrivals. However, a full recovery to pre-pandemic levels is still not likely before 2024 or 2025. Construction activity suffers from a lack of large projects but has been sustained by renovation work in the housing sector. There are an estimated 3,000 Airbnb beds now available on the island. In the real estate sector, rents continue to climb due to a lack of inventory against current demand. Housing sales have picked up from 2021 with a majority being cash buyers but still lag behind pre-pandemic levels. Government finances continue to improve with total revenue expected to exceed the target for the 2022-2023 fiscal year. Expenses have also risen to assist local Bermudians in need of financial support, but the deficit target of \$70 million is forecasted to be met. Early in the year, debt that matured was successfully refinanced albeit at higher rates than prior years. The Bermuda government continues to pledge to bring the deficit to zero by the 2025-2026 fiscal year and thereafter run a surplus of at least \$50 million to begin reducing the \$3.1 billion in outstanding debt. All of the rating agencies have reaffirmed their debt ratings and maintain a 'stable' outlook for the jurisdiction. See Item 3.D. "Risk Factors - Risks Relating to the Markets in Which We Operate - Adverse economic and market conditions in Bermuda, the Cayman Islands and the Channel Islands and the UK, have in the past resulted in and could in the future result in lower revenue, lower asset quality, increased provisions and lower earnings" and Item 3.D. "Risk Factors - Risks Relating to the Markets in Which We Operate - A decline in tourism in Bermuda or the Cayman Islands could have a material adverse effect on our business, financial condition or results of operations".

	2021P	2020R	2019	2018	2017
Bermuda GDP (in millions of BMD \$)	7,287	6,887	7,423	7,226	7,142
% change from prior year	5.8%	(7.2)%	2.7%	1.2%	3.5%
<i>Selected GDP Components:</i>					
Real estate and renting GDP (in millions of BMD \$)	1,096	1,051	1,041	1,013	981
% change from prior year	4.3%	1.0%	2.8%	3.3%	5.6%
International business GDP (in millions of BMD \$)	2,001	1,903	1,835	1,724	1,720
% change from prior year	5.1%	3.7%	6.4%	0.2%	0.1%

Source: Government of Bermuda, Department of Statistics, Annual Publication - 2021, Gross Domestic Product at current purchaser's prices, Table 4

Cayman Islands Segment

The Cayman Islands is experiencing a recovery in both cruise and stayover tourism following the cessation of all COVID-19 testing, vaccination and prevention mandates for visitors to its shores in August 2022. The first cruise ship passengers in two years began to arrive in late March 2022. Arrivals in 2022 are projected to have reached 70% of pre-pandemic levels. Cayman's GDP is projected to have grown by 4% in 2022 as tourism continues to recover. GDP growth expectations for 2023 and 2024 are 2.5% and 2.0% respectively. The Cayman Islands government implemented prudent fiscal measures to support impacted businesses and individuals during a period of heightened inflation, estimated to be 10.1% for 2022 and trending downwards to historical averages over the next several years. Elevated pandemic related expenditures and reduced revenues are anticipated to result in an operating deficit of 0.4% of GDP in 2022. Government's prudent fiscal management should see budgets returning to fiscal surpluses of 0.7% in 2023 and 1.8% in 2024. The Cayman Islands government strategically locked in favorable long term lending arrangements to provide the financing for phased infrastructure projects. Real estate transaction levels reported the second highest sales level in 2022, 11% below 2021's all-time record sales level of \$1.1 billion.

	2021E	2020	2019	2018	2017
Cayman GDP (in millions of \$)	6,144	5,609	5,943	5,530	5,153
% change from prior year	9.5%	(5.6)%	7.5%	7.3%	5.2%

Source: Economist Intelligence Unit

Channel Islands and UK Segment

2022 reflected a year of transition with the economies of Guernsey, Jersey and the UK reverting back to more normal levels of activity as COVID-19 restrictions were effectively removed during Q1 2022 and have not been re-introduced since. In 2021, the economies of Guernsey, Jersey and the UK estimated to have GDP growth of 10.3%, 10.8% and 7.5% respectively – reversing most of the contractions seen in 2020. 2022 has been characterized by a general improvement in economic activity across the economies of Guernsey, Jersey and the UK, but the impact of sharp increases in central bank interest rates from the end of 2021 has started to impact certain aspects of economic activity, most notably the housing markets.

The war in the Ukraine and its impact on global energy costs has resulted in inflation increasing significantly in all of our jurisdictions to approximately 8% in Guernsey, 10.4% in Jersey and 10% in the UK. This, together with the sharp increase in interest rates, will inevitably challenge each of these economies through an adverse impact on household expenditure.

In the UK, direct support to the economy in relation to COVID-19 ceased with the ending of the furlough scheme towards to end of 2021. Despite the onset of the "omicron" variant and a rapid increase in cases through early 2022, the UK started to "live with COVID" and by Q2 2022, final travel restrictions were lifted. The re-opening of the economy has been met with strong economic growth through 2021 and the first half of 2022. Returning economic activity to levels beyond the 2019 highs has been accompanied by a sharp rise in inflation driven by strong demand and supply chain issues. While originally seen as transitory, inflation forces become more ingrained as a result of the food and fuel crisis which followed the onset of the war in Ukraine. In an attempt to control inflation, the Bank of England has increased interest rates from 0.25% to 3.5% during 2022, with another 1% priced in for 2023. Inflation is starting to peak and shift lower, but this is coming at the cost of a weaker economy during the latter part of 2022, which will likely persist through 2023. Such weakness has already been reflected in financial markets and is likely to flow through to a housing market contraction (both transaction volume and house prices) as 2023 progresses.

Our operations in the Channel Islands and UK all use the Pound Sterling as their functional currency. Despite the Channel Islands being autonomous from the UK, their economies are closely linked to economic trends in both the UK and the eurozone due to the close relationships between the regions. See Item 3.D. "Risk Factors".

Against this backdrop, our banking businesses in the Channel Islands have benefited from loan demand from the local housing markets, cooled somewhat in the final quarter of the year in line with overall market conditions. Our loan offering has continued to be competitive in the UK market, specifically in the Prime Central London property market.

Current/Nominal (in £ Millions)	2021 CE	2020 CE	2019	2018	2017
Guernsey GDP (GVA Market/GBP)	3,446	3,125	3,248	3,170	3,101
Annual Changes (%)	10.3%	(3.8)%	2.6%	2.2%	5.7%

Source: States of Guernsey

	2021	2020	2019R	2018	2017
Jersey GDP (GBP (in £ millions))	5,087	4,592	5,108	4,803	4,710
Annual Changes (%)	10.8%	(10.1)%	6.4%	2.0%	0.9%

Source: States of Jersey

We continue to maintain a cautious stance with a liquid balance sheet, a conservative investment portfolio, and no reliance on wholesale funding. Total liquid cash and investments made up 61.3% of our balance sheet at December 31, 2022, which is slightly down from 63.3% at December 31, 2021.

The Bank continued to support customers and operate as permitted across all jurisdictions in 2022 without any support or concessions from governments or regulators in any of our operating jurisdictions.

2022 Overview

In 2022, our net income increased by \$51.4 million to \$214.0 million from \$162.7 million in 2021. This increase is driven primarily by the impact of higher market interest rates on net interest income, increased non-interest income offset by higher non-interest expenses and a higher provision for future expected credit losses due to weaker macroeconomic forecasts. Management continued to focus on the diligent management of capital, expenses and risks, and maintaining our strong capital position with CET1 and Total capital ratios of 20.3% and 24.1%, respectively, as at December 31, 2022. For the year ended December 31, 2022, the Board declared four quarterly dividends of \$0.44 per quarter totaling \$1.76 for each common share held on record as of the applicable record dates, and repurchased 102,000 common shares from the existing share repurchase program. Subsequent to year end, the Board approved a new share repurchase program authorizing the purchase of up to 3.0 million common shares expiring on February 29, 2024. The Board will continue to evaluate capital planning options and the payment of future dividends as warranted, subject to regulatory requirements. See Item 8.A. "Consolidated Statements and Other Financial Information - Dividend Policy" and Item 3.D. "Risk Factors – General Risk Factors - Holders of our common shares may not receive dividends" elsewhere in this report for further details.

The quality of our assets remained strong and total assets decreased year-over-year by \$1.0 billion to \$14.3 billion, driven primarily by decreased deposit levels in Cayman and the Channel Islands. Deposits decreased by \$0.9 billion to \$13.0 billion while loans decreased by \$0.1 billion to \$5.1 billion. The decrease in deposit balances was driven by the anticipated normalization of pandemic-related surge deposit levels and the impact of a strengthening US dollar on non-US dollar denominated deposits. The decrease in loans was driven by the Channel Islands and UK segment as a result of a decrease in the GBP/USD foreign exchange rate, the early repayment of a number of commercial facilities and is partially offset by the extension of a government facility in the Cayman Islands. Investments decreased by \$0.5 billion to \$5.7 billion driven by an increase in total net unrealized losses on the available-for-sale portfolio that is carried at fair value as a result of rising long-term US dollar interest rates. Overall liquidity remained strong, as measured by cash and cash equivalents, securities purchased under agreements to resell, short-term investments and investments in securities as a percentage of total assets, ending the year at 61.3% compared to 63.3% in the prior year.

Our shareholders' equity decreased year-over-year by \$112.7 million to \$864.8 million, which was a result of negative mark-to-market movements in the value of our fixed income investments as long term US dollar rates have increased, common share repurchases and retirements throughout the year, partially offset by organic growth through net income net of dividends paid out during the year.

Key contributors to our 2022 results were as follows:

- **Profitability:** Net income increased year-over-year by \$51.4 million, or 31.6%, to \$214.0 million, primarily due to higher market interest rates and increased non-interest income offset by higher non-interest expenses and a higher provision for future expected credit losses.
- **Net interest margin:** NIM increased by 39 basis points to 241 basis points compared to 202 basis points in 2021, and the cost of funding increased by 23 basis points to 34 basis points. The increase in NIM was due to increased market interest rates across the yield curve; loan yields increased by 64 basis points to 490 basis points; the investment portfolio yields increased by 12 basis points to 191 basis points; and yields on cash and cash equivalents, securities purchased under agreements to resell and short-term investments were up by 102 basis points to 106 basis points. The yield uptick on the investment portfolio was muted due to the slowing down of prepayment speeds in the rising interest rate environment thereby reducing the ability to reinvest at higher rates. The cost of funding increased and saw expense yields increasing by 23 basis points to 34 basis points, with pricing pressure coming from the more competitive Channel Islands markets.
- **Expenses:** Total non-interest expenses decreased year-over-year by \$2.3 million to \$331.6 million in 2022, largely due to a \$7.1 million decrease in technology and communications spending due to the depreciation charges on the existing core banking system in the prior year continuing to outpace costs associated with the new technology projects. This was partially offset by a \$4.9 million increase in staff-related costs due to higher staff incentive accruals, costs associated with the departure of a senior executive that was recorded as a non-core item, other non-recurring severance costs and inflationary salary adjustments. Our expenses also included \$1.7 million of non-core expenses including those associated with the aforementioned departure of a senior executive; residual professional fees incurred in relation to the resolved US Department of Justice inquiry and costs associated with the settlement of a non-US corporate income tax inquiry in connection with the commercial affairs of a legacy custody client. The core efficiency ratio decreased from 65.5% in 2021 to 58.9% in 2022, reflecting the rate of core non-interest expense relative to the increase in revenue.
- **Deposits:** Deposits decreased year-over-year by \$0.9 billion to \$13.0 billion as at December 31, 2022. The decrease in deposit balances was driven by the anticipated normalization of pandemic-related surge deposit levels and the impact of a strengthening US dollar on non-US dollar denominated deposits. Interest bearing deposit costs increased by 30 basis points to 44 basis points in 2022. With non-interest bearing deposits totaling \$3.0 billion on December 31, 2022, the average cost of deposits for the year increased by 23 basis points to 34 basis points. Cost of funds increased due to higher market rates and pricing pressure seen in the more competitive Channel Islands market.
- **Loan quality:** As at December 31, 2022, we had gross non-accrual loans of \$63.1 million representing 1.2% of total gross loans, an increase from \$61.0 million, or 1.2%, of total loans at December 31, 2021. The increase in non-accrual loans was driven by a few residential mortgages in the Channel Islands and UK segment moving into non-accrual and partially offset by a number of Bermuda residential mortgages improving to current status.

2021 Overview

In 2021, our net income increased by \$15.5 million to \$162.7 million from \$147.2 million in 2020. Despite the headwinds of the continued low interest rate environment following the COVID-19 pandemic on net interest income, the Bank saw an uplift in net income of \$15.5 million driven by an increase in fee income attributable to increased card service contributions and foreign exchange transactional volumes, a decrease in the provision for credit losses due primarily to improving macroeconomic forecasts, and decreases in non-interest expenses due primarily to realizing the benefits from the 2020 COVID-19 driven staff restructuring programs. These staff restructuring programs were considered non-core and contributed to non-core costs decreasing by \$6.4 million in 2021 from \$7.3 million in 2020. Management continued to focus on the diligent management of capital, expenses and risks, and maintaining our strong capital position with CET1 and Total capital ratios of 17.6% and 21.2%, respectively. For the year ended December 31, 2021, the Board declared four quarterly dividends of \$0.44 per quarter totaling \$1.76 for each common share held on record as of the applicable record dates, and repurchased 534,828 common shares from the existing share repurchase program. Subsequent to year end, the Board approved a new share repurchase program authorizing the purchase of up to 2.0 million common shares expiring on February 28, 2023. The Board will continue to evaluate capital planning options and the payment of future dividends as warranted, subject to regulatory requirements. See Item 8.A. "Consolidated Statements and Other Financial Information - Dividend Policy" and Item 3.D. "Risk Factors – General Risk Factors - Holders of our common shares may not receive dividends" elsewhere in this report for further details.

The quality of our assets remained strong and total assets increased year-over-year by \$0.6 billion to \$15.3 billion, driven primarily by increased deposit levels in Cayman and the Channel Islands. Deposits increased by \$0.6 billion to \$13.9 billion whilst loans remained stable at \$5.2 billion. The increase in deposit balances was driven by corporate deposit increases in Cayman and the Channel Islands, and partially offset by expected corporate deposit decreases in Bermuda. Investments increased by \$1.4 billion to \$6.2 billion driven by increased depositor funding and the deployment of assets into the investment portfolio. Overall liquidity remained strong, as measured by cash and cash equivalents, securities purchased under agreements to resell, short-term investments and investments in securities as a percentage of total assets, ending the year at 63.3% compared to 62.2% in the prior year.

Our shareholders' equity decreased marginally year-over-year by \$4.5 million to \$977.5 million, which was a result of negative mark-to-market movements in the value of our fixed income investments as long term US dollar rates have increased, common share repurchases and retirements throughout the year and partially offset by organic growth through net income net of dividends paid out during the year.

Key contributors to our 2021 results were as follows:

- **Profitability:** Net income increased year-over-year by \$15.5 million, or 10.5%, to \$162.7 million, which was largely attributable to increased fee revenues due to improved economic activity as economies re-opened, a decrease in the provision for credit losses and cost-savings from the prior year COVID-19 driven staff restructuring programs implemented in order to create operating leverage in a low interest rate environment.
- **Net interest margin:** NIM decreased by 40 basis points to 202 basis points compared to 242 basis points in 2020, and the cost of funding decreased by 10 basis point to 11 basis points. The decrease in NIM was due to margin declines across all interest earning asset categories, driven by lower market interest rates and increased paydowns of higher yielding investment positions with re-investment at lower rates; loan yields decreased by 28 basis points to 426 basis points; the investment portfolio yields decreased by 62 basis points to 179 basis points; and yields on cash and cash equivalents, securities purchased under agreements to resell and short-term investments were down 30 basis points to 4 basis points. The cost of funding offset the overall NIM decrease, with expense yields decreasing by 10 basis points to 11 basis points, primarily due to the active repricing of deposits in response to lower market rates.
- **Expenses:** Total non-interest expenses decreased year-over-year by \$10.7 million to \$333.9 million in 2021 due to a \$12.3 million decrease in staff-related costs from reduced headcount as a result of non-core restructuring programs initiated in 2020 and a \$1.3 million decrease in technology and communications spending due to the full depreciation of the Bank's core banking system outpacing costs associated with the new technology projects. This was offset by a \$1.5 million increase in property costs driven by increased property maintenance costs and a \$1.2 million increase in non-service employee benefits expense driven by increased costs from the post-retirement medical benefit plan. Our expenses also included \$1.8 million of non-core expenses which relate to redundancy costs associated with the transfer of Channel Islands banking operations functions from Mauritius to Butterfield's service centers in Canada and Guernsey and professional fees related to the settlement of the US Department of Justice inquiry which commenced in 2013. After removing the effect of these items, core non-interest expenses decreased marginally by \$4.5 million, from \$336.6 million in 2020 to \$332.1 million in 2021.
- **Deposits:** Deposits increased year-over-year by \$0.6 billion to \$13.9 billion as at December 31, 2021. The increase in deposit balances was driven by corporate deposit increases in Cayman and the Channel Islands, and partially offset by expected corporate deposit decreases in Bermuda. Interest bearing deposit costs decreased by 12 basis points to 14 basis points in 2021. With non-interest bearing deposits totaling \$2.8 billion on December 31, 2021, the average cost of deposits for the year decreased by 10 basis points to 11 basis points. Cost of funds decreased due to the active repricing of deposits in response to lower market rates.
- **Loan quality:** As at December 31, 2021, we had gross non-accrual loans of \$61.0 million representing 1.2% of total gross loans, a decrease from \$72.5 million, or 1.4%, of total loans at December 31, 2020. The decrease in non-accrual loans was driven by the payoff of residential mortgages and a commercial mortgage in Bermuda and partially offset by a residential mortgage in the Channel Islands moving into non-accrual in the fourth quarter of 2021.

Financial Summary

(in millions of \$)	As at December 31		Dollar change	Percent change
	2022	2021		
Assets				
Cash and cash equivalents	2,100.8	2,179.8	(79.0)	(3.6)%
<i>Of which cash and demand deposits with banks — non-interest bearing</i>	93.0	115.7	(22.7)	(19.6)%
<i>Of which demand deposits with banks — interest bearing</i>	258.2	437.6	(179.4)	(41.0)%
<i>Of which cash equivalents — interest bearing</i>	1,749.5	1,626.5	123.0	7.6 %
Securities purchased under agreements to resell	59.9	96.1	(36.2)	(37.7)%
Short-term investments	884.5	1,198.9	(314.4)	(26.2)%
Investment in securities	5,727.2	6,237.3	(510.1)	(8.2)%
<i>Of which equity securities at fair value</i>	0.2	0.2	—	— %
<i>Of which available-for-sale⁽¹⁾</i>	1,988.9	3,473.7	(1,484.8)	(42.7)%
<i>Of which held-to-maturity⁽²⁾</i>	3,738.1	2,763.3	974.8	35.3 %
Loans, net of allowance for credit losses	5,096.4	5,240.7	(144.3)	(2.8)%
Premises, equipment and computer software, net of accumulated depreciation	146.1	138.7	7.4	5.3 %
Goodwill	22.9	25.4	(2.5)	(9.8)%
Other intangible assets, net	51.5	60.8	(9.3)	(15.3)%
Equity method investments	12.5	12.6	(0.1)	(0.8)%
Other real estate owned, net	0.8	0.7	0.1	14.3 %
Accrued interest and other assets	203.5	144.3	59.2	41.0 %
Total assets	14,306.1	15,335.2	(1,029.1)	(6.7)%
Liabilities				
Total deposits	12,991.1	13,870.2	(879.1)	(6.3)%
<i>Of which — non-interest bearing</i>	3,039.7	2,820.6	219.1	7.8 %
<i>Of which — interest bearing</i>	9,951.4	11,049.6	(1,098.2)	(9.9)%
Employee benefit plans	92.0	126.2	(34.2)	(27.1)%
Accrued interest and other liabilities	185.9	189.4	(3.5)	(1.8)%
Long-term debt	172.3	171.9	0.4	0.2 %
Total liabilities	13,441.2	14,357.7	(916.5)	(6.4)%
Total shareholders' equity⁽³⁾⁽⁴⁾	864.8	977.5	(112.7)	(11.5)%
<i>Of which common share capital⁽⁴⁾</i>	0.5	0.5	—	— %
Total liabilities and shareholders' equity	14,306.1	15,335.2	(1,029.1)	(6.7)%
Common shares outstanding (number)⁽⁴⁾	50.3	49.9	0.4	0.8 %

(1) Amortized cost of AFS debt securities was \$2,209.1 million as at December 31, 2022 and \$3,495.6 million as at December 31, 2021.

(2) Fair value of HTM debt securities was \$3,197.5 million as at December 31, 2022 and \$2,786.1 million as at December 31, 2021.

(3) As at December 31, 2022, the number of outstanding awards of unvested common shares was 1.1 million (December 31, 2021: 1.0 million). Only awards for which the sum of 1) the expense that will be recognized in the future (i.e., the unrecognized expense) and 2) its exercise price, if any, was lower than the average market price of the Bank's common shares were considered dilutive and, therefore, included in the computation of diluted earnings per share.

(4) Figures reflect the retirement of 0.1 million shares during the year ended December 31, 2022 (December 31, 2021: 0.5 million).

Summary Income Statement	For the year ended December 31			Dollar change		Percent change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
(in millions of \$, except per share data)							
Interest income							
Loans	249.4	221.5	230.7	27.9	(9.2)	12.6 %	(4.0)%
Investments	115.8	101.9	109.2	13.9	(7.3)	13.6 %	(6.7)%
Deposits with banks and other	33.2	1.4	12.1	31.8	(10.7)	2,271.4 %	(88.4)%
Interest expense	(54.8)	(25.1)	(34.4)	(29.7)	9.3	118.3 %	(27.0)%
Net interest income before provision for credit losses	343.6	299.8	317.6	43.8	(17.8)	14.6 %	(5.6)%
Non-interest income	206.6	198.1	183.9	8.5	14.2	4.3 %	7.7 %
Net revenue	550.2	497.9	501.5	52.3	(3.6)	10.5 %	(0.7)%
Provision for credit (losses) recoveries	(2.4)	3.1	(8.5)	(5.5)	11.6	(177.4)%	(136.5)%
Salaries and other employee benefits	(166.2)	(161.3)	(173.7)	(4.9)	12.4	3.0 %	(7.1)%
Other non-interest expenses (including income taxes)	(169.1)	(175.7)	(173.3)	6.6	(2.4)	(3.8)%	1.4 %
Net income before other gains (losses)	212.5	164.0	146.0	48.5	18.0	29.6 %	12.3 %
Total other gains (losses)	1.5	(1.4)	1.2	2.9	(2.6)	(207.1)%	(216.7)%
Net income	214.0	162.7	147.2	51.3	15.5	31.5 %	10.5 %
Non-core items	1.7	0.9	7.3	0.8	(6.4)	88.9 %	(87.7)%
Core net income (Non-GAAP)	215.7	163.6	154.5	52.1	9.1	31.8 %	5.9 %
Core earnings to common shareholders (Non-GAAP)	215.7	163.6	154.5	52.1	9.1	31.8 %	5.9 %
Common dividends paid	(87.3)	(87.3)	(88.9)	—	1.6	— %	(1.8)%
<i>Earnings per common share from continuing operations (in US\$)</i>							
Basic	4.32	3.28	2.91	1.04	0.37	31.7 %	12.7 %
Diluted ⁽¹⁾	4.29	3.26	2.90	1.03	0.36	31.6 %	12.4 %

⁽¹⁾ Reflects only "in the money" options and certain unvested share awards, which have a dilutive effect.

Financial Ratios and Other Performance Indicators

We use a number of financial measures to track the performance of our business and guide our management. Some of these measures are defined by, and calculated in compliance with, applicable banking regulations, but such regulations often provide for certain discretion in defining and calculating the measures. These measures allow management to review our core activities, and enable us and our investors to evaluate relevant trends meaningfully when considered in conjunction with (but not in lieu of) measures that are calculated in accordance with GAAP. Non-GAAP measures used in this report are not a substitute for GAAP measures and readers should consider the GAAP measures as well.

The following table shows certain of our key financial measures for the periods indicated. Because of the discretion that we and other banks and companies have in defining and calculating these measures, care should be taken in comparing such measures used by us with similarly titled measures of other banks and companies, as such measures may not be directly comparable.

Many of these measures are non-GAAP financial measures. We believe that each of these measures is useful for investors in understanding trends in our business that may not otherwise be apparent when relying solely on our GAAP-calculated results. For more information on the non-GAAP financial measures presented below, including a reconciliation to the most directly comparable GAAP financial measures, see Item 5.A. "Item 5 - Operating and Financial Review and Prospects - Overview and highlights - Reconciliation of Non-GAAP Financial Measures".

For the year ended December 31

(in %, unless otherwise indicated)	2022	2021	2020
Return on average common shareholders' equity ⁽¹⁾	25.7	16.8	15.0
Core return on average tangible common equity ⁽²⁾	28.6	18.7	17.3
Return on average assets ⁽³⁾	1.5	1.1	1.1
Core return on average tangible assets ⁽⁴⁾	1.5	1.1	1.1
Net interest margin ⁽⁵⁾	2.41	2.02	2.42
Efficiency margin ⁽⁶⁾	59.2	65.9	67.6
Core efficiency ratio ⁽⁷⁾	58.9	65.5	66.0
Fee income ratio ⁽⁸⁾	37.7	39.5	37.3
Common equity Tier 1 capital ratio ⁽⁹⁾⁽¹⁰⁾	20.3	17.6	16.1
Tier 1 capital ratio ⁽⁹⁾	20.3	17.6	16.1
Total capital ratio ⁽⁹⁾	24.1	21.2	19.8
Leverage ratio ⁽⁹⁾⁽¹⁰⁾	6.7	5.6	5.3
Tangible common equity/tangible assets ⁽¹⁰⁾	5.6	5.8	6.1
Tangible total equity/tangible assets ⁽¹¹⁾	5.6	5.8	6.1
Non-performing assets ratio ⁽¹²⁾	0.5	0.5	0.6
Non-accrual ratio ⁽¹³⁾	1.2	1.2	1.4
Non-performing loan ratio ⁽¹⁴⁾	1.5	1.4	1.8
Net charge-off (recoveries) ratio ⁽¹⁵⁾	0.1	0.1	0.1
Core net income attributable to common shareholders ⁽¹⁶⁾⁽¹⁷⁾ (in \$ million)	215.7	163.6	154.5
Core net income per common share fully diluted ⁽¹⁸⁾⁽²⁰⁾ (in \$)	4.33	3.28	3.04
Common equity per share ⁽¹⁹⁾ (in \$)	17.42	19.83	19.88

- (1) ROE measures profitability by revealing how much profit is generated with the money invested by common shareholders. ROE represents the amount of net income to common shareholders as a percentage of average common equity and is calculated as net income to common shareholders / average common equity. Net income to common shareholders is net income for the full fiscal year, before dividends paid to common shareholders but after dividends to preference shareholders. Average common equity does not include the preference shareholders' equity.
- (2) Core ROATCE is a non-GAAP financial measure. Core ROATCE measures core profitability as a percentage of average tangible common equity. Core ROATCE is the amount of core income to common shareholders as a percentage of average tangible common equity and is calculated as core earnings to common shareholders / average tangible common equity. Core earnings to common shareholders is net earnings to common shareholders for the full fiscal year (before dividends paid to common shareholders but after dividends to preference shareholders) adjusted to exclude certain items that are included in the financial results presented in accordance with GAAP. Average tangible common equity does not include the preference shareholders' equity or goodwill and intangible assets. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (3) ROA is an indicator of profitability relative to average total assets and is intended to demonstrate how efficient management is at using the assets to generate earnings. The ROA ratio is calculated as net income / average total assets.
- (4) Core ROATA is a non-GAAP financial measure. Core ROATA is an indicator used to assess the core profitability of average tangible assets and is intended to demonstrate how efficiently management is utilizing its tangible assets to generate core net income. Core ROATA is calculated by taking the core income as a percentage of average tangible assets and is calculated as core net income / average tangible assets. Core net income is the net income adjusted to exclude certain items that are included in the financial results presented in accordance with GAAP. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (5) NIM is a performance metric that examines how successful the Bank's investment decisions are compared to its cost of funding assets and is expressed as net interest income as a percentage of average interest-earning assets. NIM is calculated as net interest income before provision for credit losses / average interest-earning assets. Net interest income is the interest earned on cash and cash equivalents, investments, loans and other interest earning assets minus the interest paid for deposits, short-term borrowings and long-term debt. The average interest-earning assets is calculated using daily average balances of interest-earning assets.
- (6) Efficiency margin is a non-GAAP financial measure. Efficiency margin is an indicator used to assess operating efficiencies and is intended to demonstrate how efficiently management is controlling expenses relative to generating revenues. The efficiency margin is calculated by taking the non-interest expenses as a percentage of total net revenue before total other gains (losses) and provisions for credit losses, and is calculated as (non-interest expense - amortization of intangible assets) / (total non-interest income + net interest income before provision for credit losses). For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (7) The core efficiency ratio is a non-GAAP financial measure. The core efficiency ratio is an indicator used to assess operating efficiencies and is intended to demonstrate how efficiently management is controlling expenses relative to generating revenues on our core activities. The core efficiency ratio is calculated by taking the core non-interest expenses as a percentage of total net revenue before provision for credit losses and other gains and losses and is calculated as (core non-interest expenses - amortization of intangible assets) / (core non-interest income + core net interest income before provision for credit losses). Core non-interest expenses exclude certain items that are included in the financial results presented in accordance with GAAP including income taxes and amortization of intangible assets. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (8) The fee income ratio is a measure used to determine the proportion of revenues derived from non-interest income sources. The ratio is calculated as non-interest income / (non-interest income + net interest income after provision for credit losses).
- (9) The Bank's regulatory capital is determined in accordance with Basel III guidelines as issued by the BMA. The total capital ratio measures the amount of the Bank's capital in relation to the amount of risk it is taking. All banks must ensure that a reasonable proportion of their risk is covered by permanent capital. Under Basel III, Pillar I, banks must maintain a minimum total capital ratio of 13.5%, inclusive of all capital buffers. In effect, this means that 13.5% of the RWA must be covered by permanent or near

permanent capital. The risk weighting process takes into account the relative risk of various types of lending and asset placements. The higher the capital adequacy ratio a bank has, the greater the level of unexpected losses it can absorb before becoming insolvent. The tier 1 capital ratio is the ratio of the Bank's core equity capital to its total RWA. RWA is the total of all assets held by the Bank weighted by credit risk according to a formula determined by the BMA which follows the BCBS guidelines in setting formulas for asset risk weights. The CET1 ratio is equivalent to the tier 1 capital ratio except that it only includes common equity in the numerator and we must maintain a minimum CET1 ratio of 10%. The Leverage Ratio is calculated by dividing tier 1 capital by an exposure measure and banks must maintain a minimum Leverage Ratio of 5.0%. The exposure measure consists of total assets (excluding items deducted from tier 1 capital) and certain off balance sheet items converted into credit exposure equivalents as well as adjustments for derivatives to reflect credit and other risks.

- (10) The TCE/TA ratio is a non-GAAP financial measure. The TCE/TA ratio is a measure used to determine how significant of an unexpected loss can be incurred by the Bank before other forms of capital, other than common equity, are impacted. The TCE/TA ratio is calculated as (common equity - intangible assets - goodwill) / tangible assets. Tangible common equity does not include the preference shareholders' equity or goodwill and intangible assets. Tangible assets are the Bank's total assets from continuing operations less goodwill and intangibles. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (11) The TE/TA ratio is a non-GAAP financial measure. The TE/TA ratio is a measure used to determine how much loss the Bank can absorb before subordinated debt capital is impacted. The TE/TA ratio is calculated as (total shareholders' equity - intangible assets - goodwill) / tangible assets. Tangible assets are the Bank's total assets from continuing operations less intangible assets and goodwill. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (12) The NPA ratio is an indicator of the credit quality of the Bank's total assets by expressing the non-performing assets as a percentage of total assets. The NPA ratio is calculated as (gross non-accrual loans + accruing loans past due 90 days + OREO) / total assets.
- (13) The NACL ratio is an indicator used to assess the credit performance of the Bank's loan portfolio by calculating the non-accrual loans as a percentage of loans. The NACL ratio is calculated as gross non-accrual loans / gross total loans. Note the reference to gross implies the amounts prior to loan allowances for credit losses.
- (14) The NPL ratio is an indicator used to assess the credit performance of the Bank's loan portfolio by calculating the non-performing loans as a percentage of loans. The NPL ratio is calculated as total gross non-performing loans / total gross loans.
- (15) The NCO ratio is an indicator used to assess the net credit loss of the Bank's loan portfolio by calculating the net charge-offs as a percentage of average total loans. The NCO ratio is calculated as net charge-off expense / average total loans. Average total loan is calculated as the average of the month-end asset balances during the relevant period.
- (16) Core net income is a non-GAAP financial measure. Core net income measures net income on a core basis. Core net income is calculated by adjusting net income for income or expense items which are not representative of the ongoing operations of our business. For a reconciliation of core net income to net income, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (17) CEACS is a non-GAAP financial measure. CEACS measures profitability attributable to common shareholders on a core basis. For a reconciliation of CEACS to net income, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (18) Core net income per common share — fully diluted is a non-GAAP financial measure. Core net income per common share — fully diluted measures core profitability attributable to common shareholders on a per share basis. For a reconciliation to net income per share, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".
- (19) Common equity per share is calculated as total common equity / number of common shares issued and outstanding at period end.

Reconciliation of Non-GAAP Financial Measures

The tables below present computations of earnings and certain other financial measures, which exclude certain significant items that are included in the financial results presented in accordance with GAAP.

We focus on core net income in many of these measures and ratios, which we calculate by adjusting net income for income or expense items which are not representative of the ongoing operations of our business, which results in non-core gains, losses and expense measures. Core net income includes revenue, gains, losses and expense items incurred in the normal course of business. We consider the normal course of business to be the general operations of our business lines of banking and wealth management. We believe that expressing earnings and certain other financial measures excluding these non-core items provides a meaningful base for period-to-period comparisons, which management believes will assist investors in analyzing the operating results of the Bank and predicting future performance. Non-core items are determined by the CFO in conjunction with the CEO, and approved by our Board of Directors. Consideration is given as to whether the expense, gain or loss is a result of exceptional circumstances or other decisions made not in the normal course of business. Items which are not in the normal course of business, such as business acquisition costs or impairment losses, or a result of exceptional circumstances, such as business restructuring costs, are considered non-core. These non-GAAP financial measures based on core net income are also used by management to assess the performance of the Bank's business because management does not consider the activities related to the adjustments to be indications of core operations. We believe that presentation of these non-GAAP financial measures will permit investors to assess the performance of the Bank on the same basis as that applied by management. Management and the Board utilize these non-GAAP financial measures as follows:

- Preparation of the Bank's operating budgets;
- Quarterly financial performance reporting; and
- Monthly reporting of consolidated results (management reporting only).

We calculate core net income attributable to common shareholders by deducting preference dividends and guarantee fees from core net income. We calculate core net income per common share by dividing the core net income attributable to common shareholders by the average number of common shares issued and outstanding during the relevant period.

The core efficiency ratio (non-GAAP), which is a measure of productivity, is generally calculated by taking the core non-interest expenses (which is the total non-interest expenses excluding non-core non-interest expenses) as a percentage of total net revenue before provision for credit losses and other gains and losses and is calculated as (core non-interest expenses - amortization of intangible assets) / (core non-interest income + core net interest income before provision for credit losses). Management uses this ratio to monitor performance regarding the efficiency of expense management and believes this measure provides meaningful information to investors.

Tangible common shareholders' equity ratios and tangible total asset ratios have become a focus of some investors in analyzing the capital position of the Bank absent the effects of intangible assets and preference shareholders' equity. The BMA and other banking regulatory bodies assess a bank's capital adequacy based on CET1 capital, the calculation of which is codified in the Basel III framework as implemented by the BMA. Because tangible common shareholders' equity and tangible total assets are not formally defined by GAAP, these measures are considered to be non-GAAP financial measures and other entities may calculate them differently. Since analysts and banking regulators may assess the Bank's capital adequacy using tangible common shareholders' equity or tangible assets, the Bank believes that it is useful to provide investors the ability to assess the Bank's capital adequacy on this same basis. The Bank calculates tangible common equity and tangible total assets on a period-end basis. The Bank also measures

performance relative to core net income over average tangible common shareholders' equity and average tangible assets to monitor performance and efficiency relative to the Bank's capital adequacy.

We believe the non-GAAP financial measures presented in this report provide useful information to management and investors that is supplementary to our financial condition, results of operations and cash flows computed in accordance with GAAP; however, we acknowledge that our non-GAAP financial measures have a number of limitations. As such, these non-GAAP financial measures should not be viewed as a substitute for results determined in accordance with GAAP, and they are not necessarily comparable to non-GAAP financial measures that other companies use.

The following tables provide: (1) a reconciliation of net income (GAAP) to core net income and core net income attributable to common shareholders (non-GAAP), (2) a computation of core net income attributable to common shareholders per common share fully diluted (non-GAAP), (3) a reconciliation of average and total shareholders' equity (GAAP) to average and total equity and average tangible common equity (non-GAAP), (4) a computation of core return to average tangible common equity (non-GAAP), (5) a reconciliation of average total assets (GAAP) to average tangible assets (non-GAAP), (6) a computation of core return on average tangible assets (non-GAAP), (7) a computation of tangible common equity to tangible assets (non-GAAP), (8) a computation of tangible total equity to tangible assets (non-GAAP), (9) a reconciliation of non-interest expenses (GAAP) to core non-interest expenses (non-GAAP), (10) a computation of the efficiency ratio (non-GAAP), and (11) a computation of the core efficiency ratio (non-GAAP).

(in millions of \$, unless otherwise indicated)		For the year ended December 31		
		2022	2021	2020
Reconciliation of net income (GAAP) to core net income (non-GAAP)				
Net income	A	214.0	162.7	147.2
Non-core (gains), losses and expenses				
<i>Non-core (gains) losses</i>				
Distribution from equity method investment ⁽¹⁾		—	—	(0.7)
Gain on disposal of Visa Inc. Class B shares ⁽²⁾		—	(0.9)	—
Total non-core (gains) losses	B	—	(0.9)	(0.7)
<i>Non-core expenses</i>				
Early retirement program, redundancies and other non-core compensation costs ⁽³⁾		1.0	1.5	8.0
Tax compliance review costs ⁽⁴⁾		0.4	0.2	—
Provision in connection with tax compliance review ⁽⁴⁾		0.2	0.1	—
Total non-core expenses	C	1.7	1.8	8.0
Total non-core (gains), losses and expenses	D=B+C	1.7	0.9	7.3
Core net income attributable to common shareholders	E=A+D	215.7	163.6	154.5
Reconciliation of return on equity (GAAP) to core return on average tangible common equity (non-GAAP)				
Core net income attributable to common shareholders	E=A+D	215.7	163.6	154.5
Average common equity	F	833.2	965.7	981.0
Less: average goodwill and intangible assets		(78.5)	(90.0)	(92.3)
Average tangible common equity	G	754.7	875.8	888.8
Return on equity	A/F	25.7 %	16.8 %	15.0 %
Core return on average tangible common equity	E/G	28.6 %	18.7 %	17.3 %
Reconciliation of diluted earnings per share (GAAP) to core earnings per common share fully diluted (non-GAAP)				
Adjusted weighted average number of diluted common shares (in thousands)	F	49.9	49.9	50.9
Earnings per common share fully diluted	A/J	4.29	3.26	2.90
Non-core items per share	D/F	0.04	0.02	0.14
Core earnings per common share fully diluted		4.33	3.28	3.04
Reconciliation of return on average assets (GAAP) to core return on average tangible assets (non-GAAP)				
Total average assets	G	14,596.1	15,261.8	13,618.2
Less: average goodwill and intangible assets		(78.5)	(90.0)	(92.3)
Average tangible assets	H	14,517.6	15,171.9	13,525.9
Return on average assets	A/G	1.5 %	1.1 %	1.1 %
Core return on average tangible assets	E/H	1.5 %	1.1 %	1.1 %

For the year ended December 31

(in millions of \$, unless otherwise indicated)

		2022	2021	2020
Tangible equity to tangible assets				
Shareholders' equity		864.8	977.5	981.9
Less: goodwill and intangible assets		(74.4)	(86.1)	(92.8)
Tangible common equity	I	790.4	891.4	889.1
Total assets		14,306.1	15,335.2	14,738.6
Less: goodwill and intangible assets		(74.4)	(86.1)	(92.8)
Tangible assets	J	14,231.7	15,249.1	14,645.8
Tangible common equity to tangible assets	I/J	5.6 %	5.8 %	6.1 %
Efficiency ratio				
Non-interest expenses		331.6	333.9	344.6
Less: amortization of intangibles		(5.7)	(6.0)	(5.8)
Non-interest expenses before amortization of intangibles	K	325.9	327.9	338.8
Non-interest income		206.6	198.1	183.9
Net interest income before provision for credit losses		343.6	299.8	317.6
Net revenue before provision for credit losses and other gains/losses	L	550.2	497.9	501.5
Efficiency ratio	K/L	59.2 %	65.9 %	67.6 %
Core efficiency ratio				
Non-interest expenses		331.6	333.9	344.6
Less: non-core expenses	C	(1.7)	(1.8)	(8.0)
Less: amortization of intangibles		(5.7)	(6.0)	(5.8)
Core non-interest expenses before amortization of intangibles	M	324.2	326.1	330.8
Core revenue before other gains and losses and provision for credit losses	N	550.2	497.9	501.5
Core efficiency ratio	M/N	58.9 %	65.5 %	66.0 %

(1) Relates to gain on distribution from an equity method investment as a result of the sale of a legacy business interest.

(2) Relates to gain on disposal of Visa Inc. Class B shares which were received as part of the restructuring of Visa U.S.A. in 2007.

(3) In 2020, primarily relates to the efficiency program, including voluntary separation, early retirement and redundancy costs. Management does not consider the costs associated with these projects to be core to the strategy of the business.

In 2021, primarily relates to redundancy costs associated with the transfer of Channel Islands banking operations functions from Mauritius to Butterfield's service centers in Canada and Guernsey.

In 2022, primarily relates to costs associated with the departure of a senior executive.

(4) Relates to the professional fees and final settlement of the US Department of Justice inquiry which commenced in 2013 and the settlement of a non-US corporate income tax inquiry in connection with the commercial affairs of a legacy custody client.

The following charts show the trajectory of our performance from 2018 to 2022:

GAAP Net Income to Common (\$ in millions)



GAAP Earnings per Common Share Fully Diluted



Core Net Income to Common (\$ in millions)¹



Core Earnings per Common Share Fully Diluted²

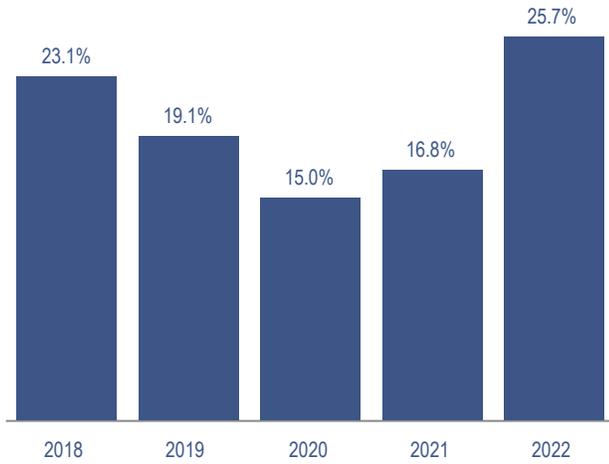


⁽¹⁾ Core Net Income to Common is a non-GAAP financial measure that is calculated by adjusting net income for income or expense items which management considers not to be representative of the ongoing operations of our business and preference share dividends, guarantee fees and premiums paid on preference share repurchases and redemptions. For a reconciliation of Core Net Income to Common to GAAP net income to common, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".

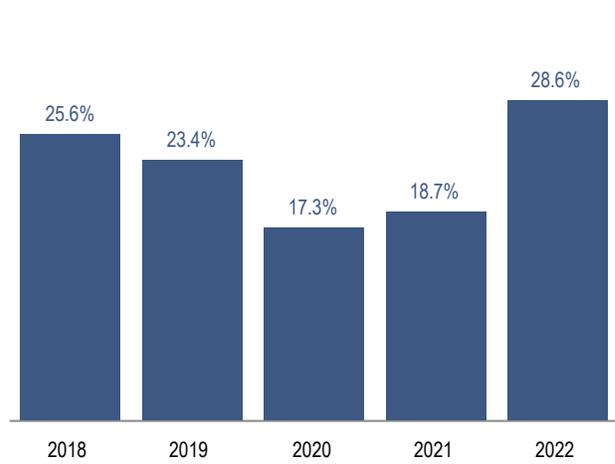
⁽²⁾ Core Earnings per Common Share Fully Diluted is a non-GAAP financial measure that is calculated by dividing Core Earnings to Common by the weighted average shares outstanding. For a reconciliation of Core Earnings per Common Share Fully Diluted to GAAP earnings per share, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".

Our return on equity for 2022 of 25.7% and our Core ROATCE¹ for 2022 of 28.6% were driven by a number of factors, including: significant fee income with historically low capital requirements; increasing market interest rates benefiting net interest income; reductions in AOCIL, specifically in the AFS investment portfolio due to higher US dollar market interest rates; and our operations in corporate income tax neutral jurisdictions. As a result, our business generated core net income in 2022 well in excess of that needed to execute our organic balance sheet growth strategy.

Return on Equity



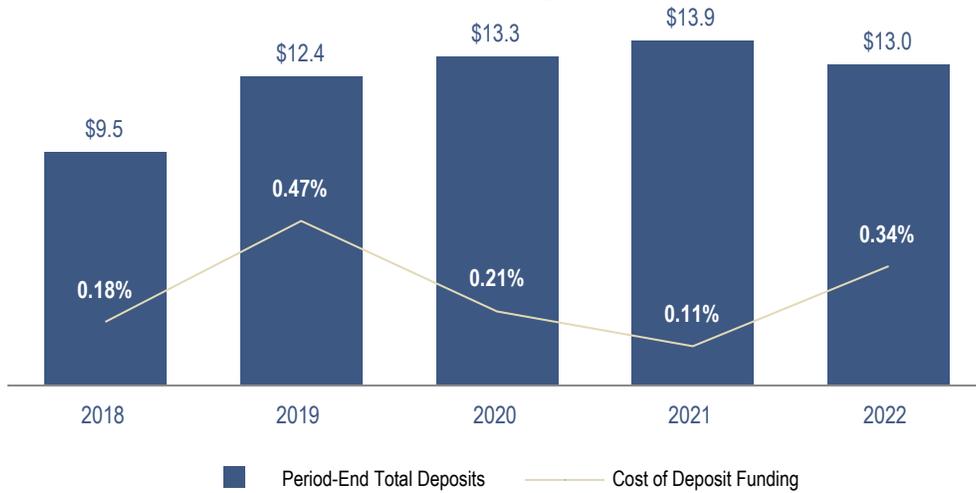
Core ROATCE¹



⁽¹⁾ Core ROATCE is a non-GAAP financial measure that is calculated by dividing core earnings to common shareholders by average tangible common equity. Average tangible common equity does not include the preference shareholders' equity or goodwill and intangible assets. For more information on the non-GAAP financial measures, see Item 5.A. "Operating Results - Reconciliation of Non-GAAP Financial Measures".

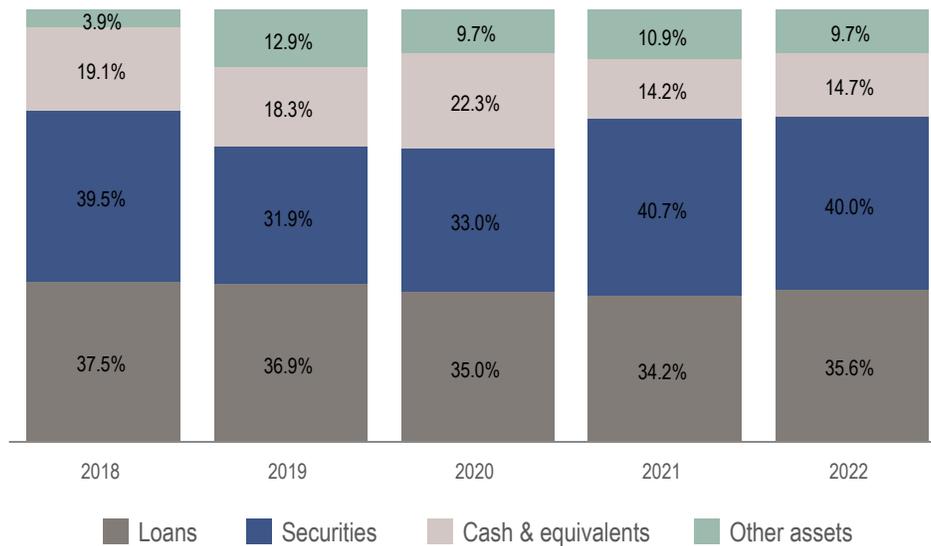
The following chart shows total deposit trends for 2018 to 2022:

Deposit Balance and Funding Costs (\$ in billions)



Historically, the markets in which we operate generate fewer loans than deposits, which has led us to take a conservative approach to managing our balance sheet. We accomplish this by maintaining a large cash balance and investing in high quality and liquid securities. The following chart illustrates our asset composition from 2018 to 2022:

Balance Sheet Composition - Total Assets (\$ in billions)

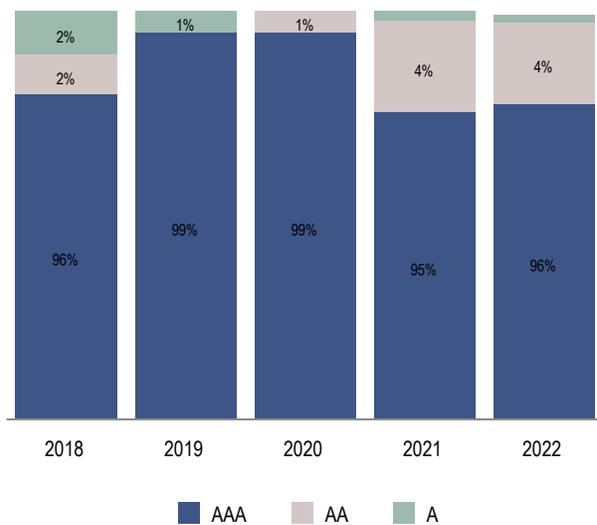


As at December 31, 2022, 15% of our balance sheet was cash and cash equivalents, which included cash and demand deposits with banks, unrestricted term deposits, and treasury bills with a maturity of less than three months.

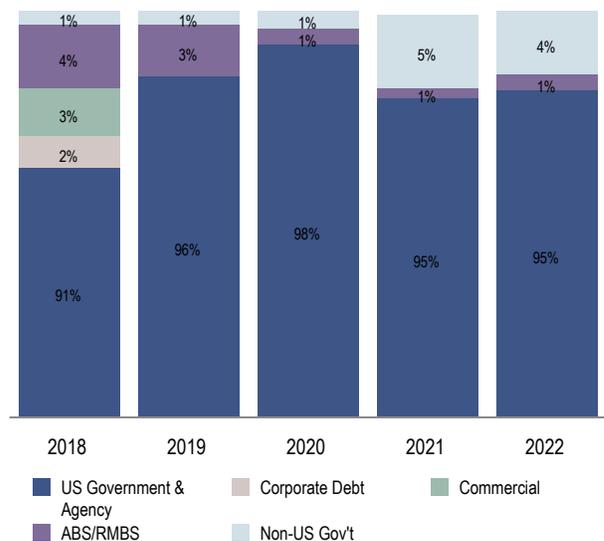
In addition to maintaining a large cash and cash equivalents balance, we also have a large and conservative securities investment portfolio. We have a disciplined investment portfolio selection process and invest in highly rated securities. We also seek to ensure that our portfolio remains liquid across market cycles: 94.7% of our portfolio was invested in US government treasuries and mortgage-backed securities issued by US governmental agencies. Our investment strategy as at December 31, 2022, aims to align the behavioral interest rate risk profile of our assets and liabilities — as at December 31, 2022, the average duration of our AFS investment portfolio was 3.6 years, the average duration of our HTM investment portfolio was 6.5 years, and the average duration of our total investment portfolio was 5.4 years. As at December 31, 2022, the total carrying value of our AFS investment portfolio was \$2.0 billion, and the total carrying value of our HTM investment portfolio was \$3.7 billion.

The following charts show the composition of our investment portfolio by rating and asset type from 2018 to 2022:

Investment Portfolio - Rating



Investment Portfolio - Asset Type



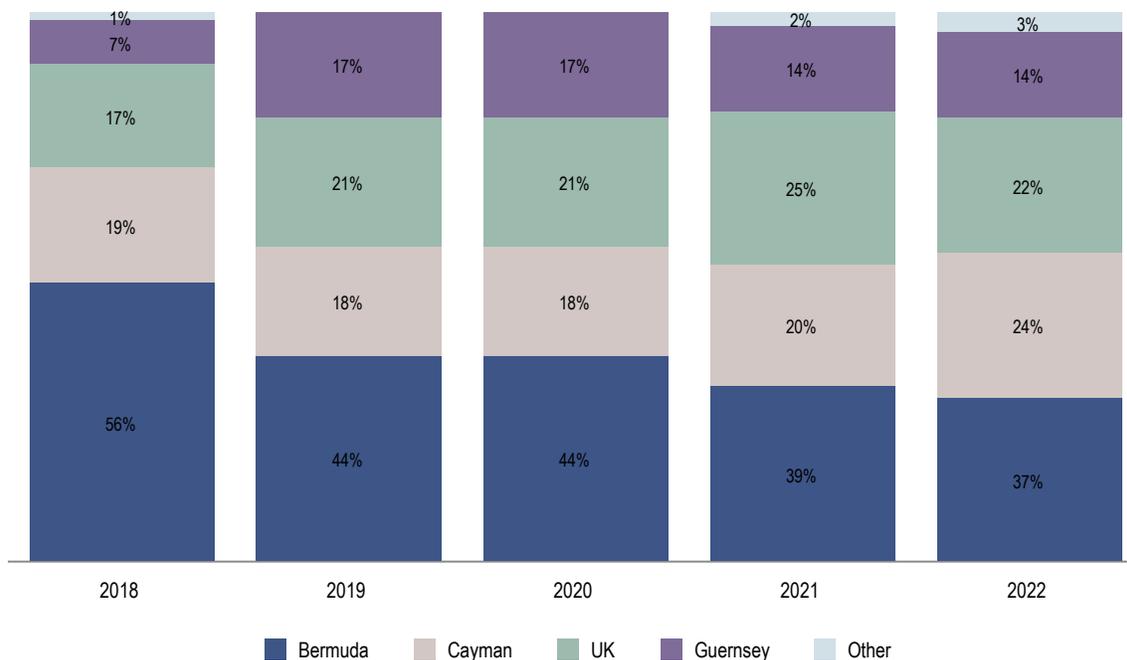
The combination of our significant cash and securities portfolios helps drive our capital efficient balance sheet, with risk-weighted assets equal to 33.9% of our total assets and a Basel III total capital ratio of 24.1%, each as at December 31, 2022.

Our loan underwriting process requires that we complete a full credit assessment of every customer prior to committing to a loan, which we believe has resulted in a high quality loan portfolio. Our lending markets do not have secondary markets for loans and as such we hold all of our originated loans on our balance sheet. In 2021 and 2022,

net charge-offs represented 0.05% and 0.11%, respectively, of average loans. As at December 31, 2022, our non-accrual loan balance was \$63.1 million, or 1.2% of total gross loans, and our loans past due were \$108.7 million or 2.1% of total gross loans, of which 77.7% were full recourse residential mortgages. As at December 31, 2022, our loan portfolio consisted of 57% floating-rate loans and 43% fixed-rate loans generally with contractual rate resets of 3 to 5 years.

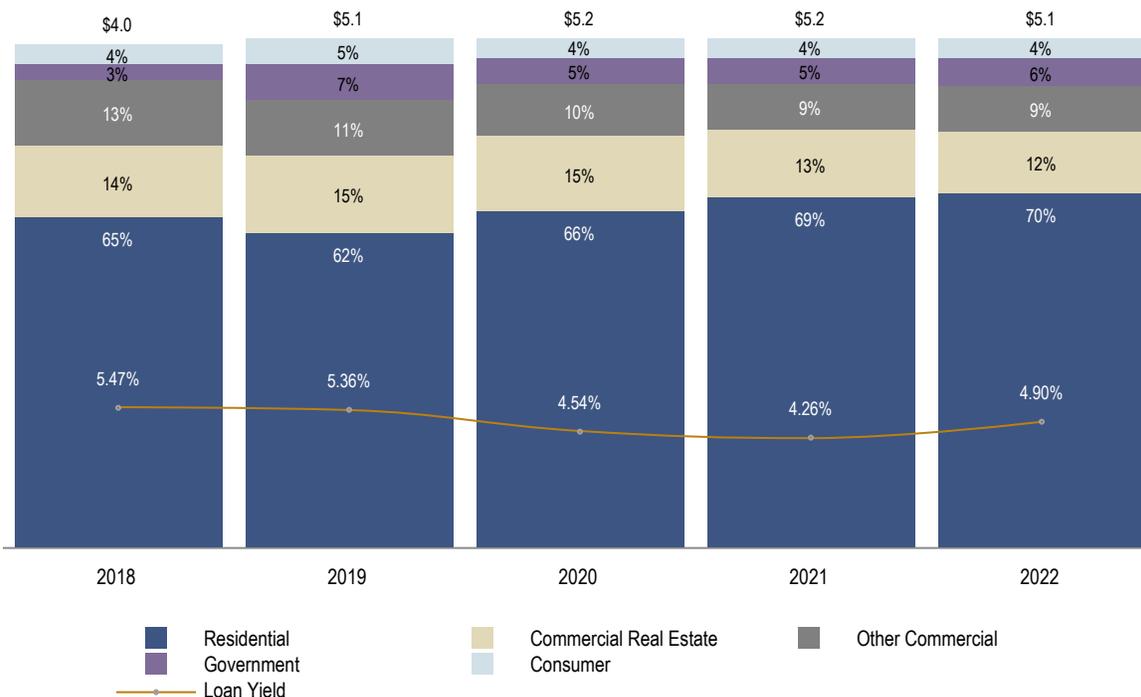
The following chart shows the segment composition of our loan portfolio from 2018 to 2022:

Loan Portfolio Composition by Origination - Geography



Our loan portfolio has exhibited stability over time. The following chart shows loan portfolio trends for 2018 to 2022:

Loan Balance and Yield (\$ in billions)

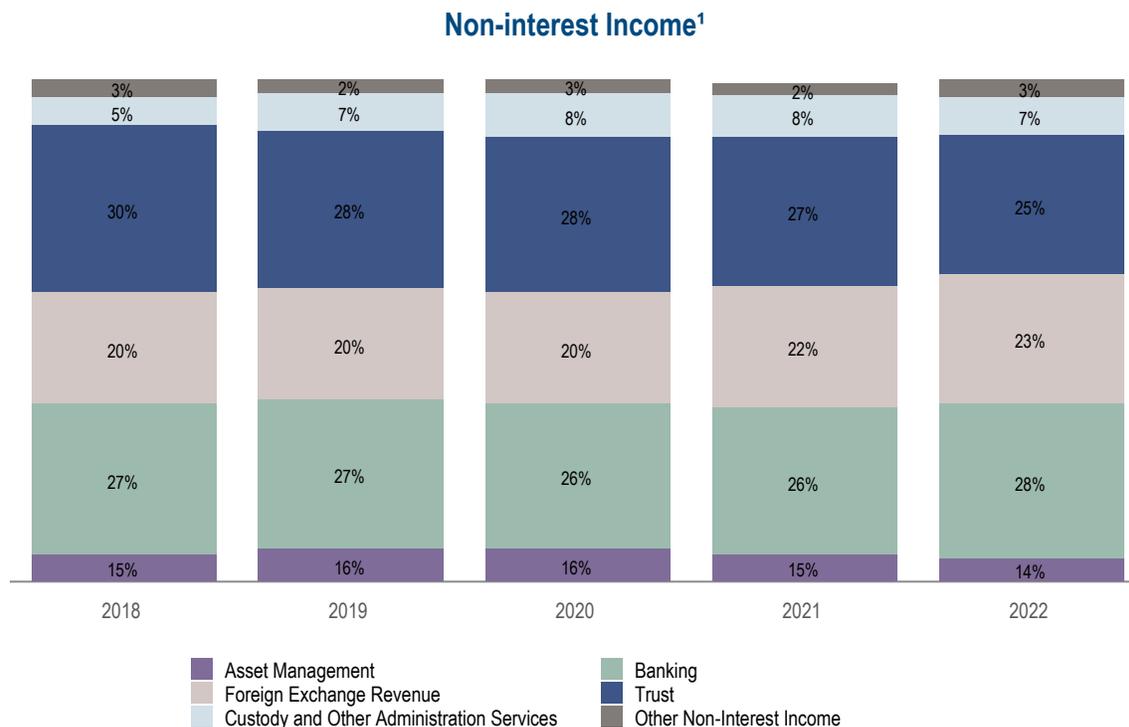


The domestic lending markets in Bermuda, the Cayman Islands, and the Channel Islands have a limited number of participants and significant barriers to entry. 69.7% of our loan balances were residential mortgages as at December 31, 2022. These loans are attractive for a number of reasons. Our mortgages have exhibited predictable cash flows, with historically negligible refinancing activity due to significant transaction costs to refinance in these lending markets. Additionally, our mortgages in these markets have historically benefited from a manual underwriting process, low LTVs (with 59% of residential loans below 70% LTV as at December 31, 2022), and a full recourse legal system.

We have also generated balanced sources of non-interest income from a well-diversified customer base. For the five-year period ended December 31, 2022, our non-interest income is evenly split between banking which consists of banking and foreign exchange revenue, and wealth management, which consists of trust, asset management, and custody and other administration services.

Fee income from a typical trust client serviced in our wealth management business line is driven primarily by the size and complexity of our clients' assets and holdings, which are generally diversified across multiple geographies; the performance of these businesses is not typically linked to the performance of the domestic economies of our local markets. Non-interest income represented 37.7% of our total Net Revenue (our fee income ratio) in 2022, and contributed significantly to the Company's high Core ROATCE and excess capital generation as limited capital is required for our fee income business.

The following chart shows our various sources of non-interest income from 2018 to 2022:



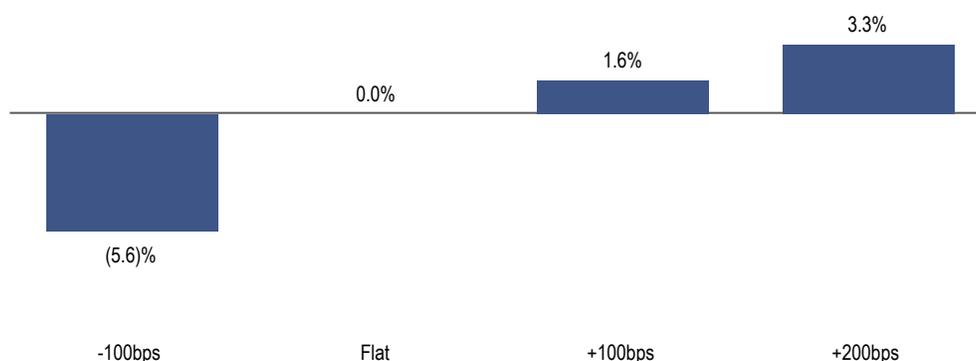
2022 Non-Interest Income: \$206.6 million / 37.7% Fee Income Ratio

⁽¹⁾ Foreign exchange revenue represents income generated from client-driven transactions in the normal course of business. We do not engage in proprietary trading.

Growth Opportunities

We expect that, all else being equal, a rising interest rate environment would increase our net interest income before provision for credit losses because an increase in our cost of deposits would lag an increase in yield of our cash, securities and loans. In addition, a significant portion of our deposits are non-interest bearing (23% as at December 31, 2022), and as a result, a portion of our funding is only partially sensitive to rising rates. Our non-interest bearing deposit balances have historically exhibited low correlation with market interest rates, a behavior that we attribute in part to a sizable client base that utilizes our bank for custody and clearing services as well as cash management purposes. Potential changes to our net interest income in hypothetical rising and declining rate scenarios, measured over a 12-month period, are presented in the chart below (these projections assume parallel shifts of the yield curves occurring immediately and no changes in other potential variables):

Net Interest Income Sensitivity



A negative 100 basis points interest rate shock reflects a reduction in projected 12-month net interest income of 5.6% compared to the flat rate scenario. The loss of income is driven by lower loan and investment yields, which more than offset reduced rates paid on deposits. Mitigating against the loss of income is the potential to charge negative interest rates on deposits (which we did for certain currencies in 2020 and 2021 in the low interest rate environment) and certain loans that have rate floors. Refer to discussion under “- Risk Management”.

In addition, we are well-positioned as an acquirer of certain businesses, in private trust and banking. Our acquisition strategy seeks to capitalize on opportunities created by international financial institutions and trust companies that wish to simplify their businesses and deploy capital to other markets or business lines. We consider a wide range of potential acquisition opportunities, and we have a well-defined, disciplined approach to identifying potential acquisition targets across numerous criteria including: geography, business alignment, size, timing, quality, buyer universe and financial hurdles. Our focus has been on the private trust business and banking in our core markets where we have expertise, scale and a strong brand.

In October 2017, we entered into an agreement to acquire Deutsche Bank’s Global Trust Solutions business, excluding its US operations. This transaction added the ongoing management and administration of the GTS portfolio, comprising approximately 1,000 trust structures for approximately 900 private clients in Guernsey, Switzerland, the Cayman Islands, and Singapore. As part of the deal, we also purchased a service company in Mauritius to provide operations and support services to the Cayman and Channel Islands banking and custody businesses. This transaction was completed in March 2018.

In February 2018, we entered into an agreement to acquire Deutsche Bank’s banking and custody business in the Cayman Islands, Jersey and Guernsey, which provide services primarily to financial intermediaries and corporate clients. The Bank began to onboard certain customer deposits relating to the acquisition in 2018, and this activity was completed in the first half of 2019.

In April 2019, we entered into an agreement to acquire ABN AMRO (Channel Islands) Limited which provides banking, investment management and custody products to three distinct client groups, including trusts, private clients, and funds in Jersey and Guernsey. The transaction was completed in July 2019.

In September 2022, we entered into an agreement to acquire the Credit Suisse global trust businesses operating in Singapore, Guernsey and The Bahamas. This transaction is expected to close in the latter half of 2023.

Our relationship-driven business model and international corporate clientele have allowed us to develop a stable core deposit base with historically low funding costs. We believe our customers’ deposit activity has historically been relatively inelastic to deposit pricing given the nature of corporate activity and competition in retail deposit taking in our segments. From 2018 to 2022, deposits have grown at a CAGR of approximately at +5% in the Cayman Islands and +21% in the Channel Islands and the UK while it has remained flat in Bermuda, taking into account the Deutsche Bank’s banking and custody businesses acquisition in February 2018 that added \$0.9 billion of new deposits, and the ABN AMRO (Channel Islands) acquisition in April 2019 that added \$3.5 billion in deposits. As at December 31, 2022, we had \$13.0 billion in deposits at a cost of 0.34%, of which 23% were non-interest bearing demand deposits, 53% were interest bearing demand deposits with a weighted-average cost of 0.12%, and 24% were term deposits with a weighted-average cost of 2.54% and an average contractual or remaining maturity of 101 days. We believe the current market conditions in Bermuda, the Cayman Islands, and the Channel Islands will allow us to continue to benefit from favorable deposit pricing, despite the pricing pressure experienced in the Channel Islands in 2022.

Consolidated Results of Operations and Discussion for Fiscal Years Ended December 31, 2022, 2021 and 2020

Net Revenue

2022 vs. 2021

Total net revenue before provision for credit losses and other gains and losses for 2022 was \$550.2 million, up \$52.3 million, or 10.5%, from 2021. Net interest income before provision for credit losses increased from \$299.8 million in 2021 to \$343.6 million in 2022, an increase of \$43.8 million, or 14.6%, which was primarily due to higher margins on all interest-earning assets and liabilities as major central banks raised interest rates with 10-year US Treasuries reaching their highest levels since 2008. Loan interest income increased by \$27.8 million to \$249.4 million as yields increased by 64 basis points. The average volume of loans outstanding decreased by \$106.4 million. The decrease was driven by the Channel Islands and UK segment as a result of a decrease in the GBP/USD foreign exchange rate, the maturity and early repayment of a few commercial facilities and partially offset by the extension of a government facility in the Cayman Islands. Investment interest income increased by \$13.9 million to \$115.8 million, the average volume of investments increased by \$0.4 billion, and yields on investments increased by 12 basis points. Deposits with banks interest income increased by \$31.8 million, or 2,199.2%, whilst the average volume decreased by \$839.6 million as a result of reduced depositor funding. The total cost of deposits increased by \$29.7 million or 191.6%, reflecting a 23 basis points increase to 34 basis points, driven by pricing pressure in the more competitive Channel Islands markets. In addition, non-interest income was up by \$8.5 million, or 4.3%, principally attributable to volume-driven increases in both banking and foreign exchange revenue coupled with one-off loan restructuring and breakage fees.

2021 vs. 2020

Total net revenue before provision for credit losses and other gains and losses for 2021 was \$497.9 million, down \$3.5 million, or 0.7%, from 2020. Net interest income before provision for credit losses decreased from \$317.6 million in 2020 to \$299.8 million in 2021, a decline of \$17.8 million, or 5.6%, and was due to margin declines across interest earning assets driven by lower global market interest rates. Loan interest income decreased by \$9.1 million to \$221.5 million as yields decreased by 28 basis points due to lower rates, the repayment of a few large commercial facilities and paydowns in the higher-yielding Bermuda residential mortgage portfolio. The average volume of loans outstanding increased by \$138.2 million. Cayman and the Channel Islands and UK segments saw growth in their residential mortgage portfolios, which was partially offset by the repayment of a number of commercial and commercial real estate facilities in Bermuda and the Channel Islands and UK segments during the period. Investment interest income decreased by \$7.3 million to \$101.9 million, the average volume of investments increased by \$1.2 billion, and yields on investments decreased by 62 basis points due to the aforementioned decrease in global market interest rates, increasing prepayment speeds with re-investment at lower rates in the investment portfolio. Deposits with banks interest income decreased by \$10.7 million, or 88.1%, the average volume increased by \$441.6 million which was driven by corporate deposit funding increases in Cayman and the Channel Islands, and partially offset by expected corporate deposit decreases in Bermuda. The total cost of deposits improved by \$9.6 million or 38.3%, reflecting a 10 basis points decrease to 11 basis points. In addition, non-interest income was up by \$14.2 million, or 7.7%, principally attributable to volume-driven increases in both banking and foreign exchange revenue coupled with higher facility non-utilization fees and one-off loan breakage fees.

Net Interest Income Before Provision for Credit Losses

Net interest income is the amount of interest earned on our interest-earning assets less interest paid on our interest bearing liabilities. There are several drivers of the change in net interest income, including changes in the volume and mix of interest-earning assets and interest bearing liabilities, their relative sensitivity to interest rate movements, and the proportion of non-interest bearing sources of funds, such as equity and non-interest bearing current accounts.

The following table presents the components of net interest income for the years ended December 31, 2022, 2021 and 2020:

(in millions of \$)	Year ended December 31								
	2022			2021			2020		
	Average balance (\$)	Interest (\$)	Average rate (%)	Average balance (\$)	Interest (\$)	Average rate (%)	Average balance (\$)	Interest (\$)	Average rate (%)
Assets									
Cash and cash equivalents, securities purchased under agreements to resell, and short-term investments	3,132.6	33.2	1.06 %	3,972.2	1.4	0.04 %	3,530.6	12.1	0.34 %
Investment in securities	6,058.1	115.8	1.91 %	5,693.2	101.9	1.79 %	4,512.5	109.2	2.41 %
Loans	5,093.5	249.4	4.90 %	5,199.9	221.5	4.26 %	5,061.7	230.7	4.54 %
Interest earning assets	14,284.3	398.4	2.79 %	14,865.3	324.9	2.19 %	13,104.9	352.0	2.68 %
Other assets	370.3	—	—	367.4	—	—	395.4	—	—
Total assets	14,654.6	398.4	2.72 %	15,232.7	324.9	2.13 %	13,500.3	352.0	2.60 %
Liabilities									
Deposits	10,269.1	(45.2)	(0.44)%	10,845.3	(15.5)	(0.14)%	9,710.8	(25.1)	(0.26)%
Securities sold under agreement to repurchase	0.6	—	(3.95)%	—	—	— %	—	—	— %
Long-term debt	172.1	(9.6)	(5.58)%	171.7	(9.6)	(5.59)%	173.4	(9.3)	(5.35)%
Interest bearing liabilities	10,441.8	(54.8)	(0.52)%	11,016.9	(25.1)	(0.23)%	9,884.2	(34.4)	(0.35)%
Non-interest bearing current accounts	3,033.3	—	—	2,895.0	—	—	2,363.9	—	—
Other liabilities	284.3	—	—	295.1	—	—	280.6	—	—
Total liabilities	13,759.3	(54.8)	(0.40)%	14,207.0	(25.1)	(0.18)%	12,528.6	(34.4)	(0.27)%
Shareholders' equity	895.3	—	—	1,025.7	—	—	971.7	—	—
Total liabilities and shareholders' equity	14,654.6	—	—	15,232.7	—	—	13,500.3	—	—
Non-interest bearing funds net of non-interest earning assets (free balance)	3,842.5	—	—	3,848.4	—	—	3,220.7	—	—
Net interest margin		343.6	2.41 %		299.8	2.02 %		317.6	2.42 %

2022 vs. 2021

Net interest income before provision for credit losses of \$343.6 million in 2022 represented an increase of \$43.8 million (or 14.6%) compared to 2021. Net interest income is generated by our main segments of Bermuda, the Cayman Islands, and the Channel Islands and the UK. Interest income increased by \$73.5 million in 2022, which was driven by higher market interest rates across the yield curve as major central banks increased rates in response to inflation concerns.

Loan interest income increased in 2022 by \$27.8 million as base rate increases in all segments increased during the year. The yield pick-up was partially offset by a decline in average balances driven by the maturity and early repayment of a few commercial facilities.

Investment interest income increased by \$13.9 million, primarily driven by the increase in the US treasury rates. The overall duration of the portfolio at year-end was 5.4 years, an increase of 1.2 years from 2021 as prepayments slowed in response to the rising rate environment.

Interest bearing liability costs increased to 52 basis points, which resulted in an increase in interest expense by \$29.7 million, attributable to the active repricing of deposits in response to market conditions, particularly in the Channel Islands and UK segment.

Average free balances for 2022 were \$3.8 billion (2021: \$3.8 billion), including non-interest bearing current accounts of \$3.0 billion (2021: \$2.9 billion), shareholders' equity of \$895.3 million (2021: \$1,025.7 million), net of other assets and other liabilities totaling \$86.0 million (2021: \$72.3 million). See "Risk Management" below for more information on how interest rate risk is managed.

2021 vs. 2020

Net interest income before provision for credit losses of \$299.8 million in 2021 represented a decrease of \$17.8 million (or 5.6%) over our net interest income before provision for credit losses in 2020. Net interest income is generated by our main segments of Bermuda, the Cayman Islands, and the Channel Islands and the UK. Interest income decreased by \$27.1 million in 2021, which was driven by lower market interest rates across the yield curve.

Loan interest income decreased in 2021 by \$9.1 million due to lower rates, the repayment of a few large commercial facilities and paydowns in the higher-yielding Bermuda residential mortgage portfolio.

Investment interest income decreased by \$7.3 million, primarily driven by increased paydowns and reinvestment at lower yields in the low market rate environment. This was partially offset by an increase of \$1.2 billion in average investment balances which was driven by both increased depositor funding and the redeployment of funds from cash and cash equivalents. The overall duration of the portfolio at year-end was 4.2 years, an increase of 1.5 years from 2020.

Interest bearing liability costs decreased to 23 basis points, which resulted in a decrease in interest expense of \$9.3 million, attributable to the active repricing of deposits in response to market conditions.

Average free balances for 2021 were \$3.8 billion (2020: \$3.2 billion), including non-interest bearing current accounts of \$2.9 billion (2020: \$2.4 billion), shareholders' equity of \$1,025.7 million (2020: \$971.7 million), net of other assets and other liabilities totaling \$72.3 million (2020: \$114.9 million). See "Risk Management" below for more information on how interest rate risk is managed.

Provision for Credit Losses

2022 vs. 2021

Our net provision for credit losses in 2022 was a charge of \$2.4 million compared to a release of \$3.1 million in 2021. The movement is due to weaker macroeconomic forecasts impacting future expected credit loss estimates, the extension of a large, long-term government facility in the Cayman Islands and charge-offs on a commercial facility.

2021 vs. 2020

Our net provision for credit losses in 2021 was a release of \$3.1 million compared to a charge of \$8.5 million in 2020. Provisions decreased due to both the improvement in macroeconomic forecasts impacting future expected credit loss estimates and a reduction in non-performing loans.

Other Gains (Losses)

The following table represents the components of other gains (losses) for the years ended December 31, 2022, 2021 and 2020:

(in millions of \$)	For the year ended December 31			Dollar Change		Percent Change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Net gains (losses) on equity securities	—	0.1	0.7	(0.1)	(0.6)	(100.0)%	(85.7)%
Net realized gains (losses) on available-for-sale investments	—	(0.2)	1.2	0.2	(1.4)	(100.0)%	(116.7)%
Net gains (losses) on other real estate owned	0.4	(0.1)	(0.1)	0.5	—	(500.0)%	— %
Net other gains (losses)	1.1	(1.2)	(0.6)	2.3	(0.6)	(191.7)%	100.0 %
Total other gains (losses)	1.5	(1.4)	1.2	2.9	(2.6)	(207.1)%	(216.7)%

Net Gains (Losses) on Equity Securities

The balance in 2021 reflected the net realized gain on the sale of seed investments in Butterfield mutual funds. The balance in 2020 reflected lower mark-to-market gains on equity securities, partly due to mark-to-market losses recognized earlier in 2020 due to market volatility as a result of the COVID-19 pandemic.

Net Realized Gains (Losses) on Available-for-Sale Investments

Net realized losses of \$0.2 million were recorded in 2021 and gains of \$1.2 million in 2020. In 2021, the loss was due to the strategic disposal of lower yielding explicitly guaranteed and implicitly guaranteed US government and federal agency securities. In 2020, the gain was due to the strategic decision to liquidate floating rate and purchase fixed rate US government and federal agency securities.

Net Gains (Losses) on Other Real Estate Owned

Valuation adjustments and realized gains and losses related to real estate held for sale resulted in gains of \$0.4 million in 2022 compared to losses of \$0.1 million in 2021 and \$0.1 million in 2020. In 2022, these gains relate to the disposal of foreclosed property in the Channel Islands and UK segment. In 2021 and 2020, these losses relate to the net revaluation losses on foreclosed properties.

Net Other Gains (Losses)

Net other gains were \$1.1 million in 2022 compared to net other losses of \$1.2 million in 2021 and \$0.6 million in 2020. The gains in 2022 mainly relate to the reversal of a defined benefit settlement accounting adjustment in the Channel Islands and UK segment recorded in the previous year. The aforementioned losses in 2021 were partially offset by a gain on the disposal of Visa Inc. Class B shares which were received as part of the restructuring of Visa U.S.A. in 2007 and which management considers to be non-core. The losses in 2020 relate to a defined benefit pension plan adjustment offset by a distribution from an equity method investment as a result of the sale of a legacy business interest.

Non-Interest Income

Non-interest income represents capital efficient and stable revenue sources for the Group. Non-interest income is derived primarily from banking, including cards, foreign exchange commissions, asset management fees as well as trust fees. Our trust fee structure provides for varied pricing that depends primarily on the size of the relationship and the nature of services provided. As a result, it is not always possible to draw a direct relationship between the value of client assets and the level of non-interest income, though the trend of non-interest income generally follows the trend in client asset levels.

Total non-interest income increased by \$8.5 million from \$198.1 million in 2021 to \$206.6 million in 2022. Non-interest income as a percentage of total net revenue decreased from 39.5% in 2021 to 37.7% in 2022 as a result of the increased contribution of net interest income to total net revenue in the rising rate environment.

Total non-interest income increased by \$14.2 million from \$183.9 million in 2020 to \$198.1 million in 2021. Non-interest income as a percentage of total net revenue increased from 37.3% in 2020 to 39.5% in 2021.

The following table presents the components of non-interest income for the years ended December 31, 2022, 2021 and 2020:

(in millions of \$)	For the year ended December 31			Dollar change		Percent change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Asset management	29.7	29.9	29.2	(0.2)	0.7	(0.7)%	2.4 %
Banking	57.1	51.9	47.3	5.2	4.6	10.0 %	9.7 %
Foreign exchange revenue	47.8	43.4	37.2	4.4	6.2	10.1 %	16.7 %
Trust	52.3	52.9	50.7	(0.6)	2.2	(1.1)%	4.3 %
Custody and other administration services	13.6	15.2	13.8	(1.6)	1.4	(10.5)%	10.1 %
Other non-interest income	6.0	4.8	5.6	1.2	(0.8)	25.0 %	(14.3)%
Total non-interest income	206.6	198.1	183.9	8.5	14.2	4.3 %	7.7 %

Asset Management

Asset management revenues are generally based on the market value of assets managed and the volume of transactions and fees for other services rendered. We provide asset management services from our offices in Bermuda, the Cayman Islands, and the Channel Islands. Revenues from asset management were \$29.7 million in 2022, compared to \$29.9 million in 2021, and \$29.2 million in 2020.

The table that follows shows the changes in the year-end values of clients' assets under management, sub-divided between those managed for clients on a discretionary basis and client funds invested in mutual funds that Butterfield manages ("Butterfield Funds"):

(in millions of \$)	Year ended December 31			Dollar Change	
	2022	2021	2020	2021 to 2022	2020 to 2021
Butterfield Funds	1,753	1,758	2,029	(5)	(271)
Other assets under management	3,296	3,740	3,529	(444)	211
Total assets under management	5,049	5,498	5,558	(449)	(60)

2022 vs. 2021

Asset management fees are generated primarily from management fees earned from Butterfield Funds and discretionary portfolios, as well as custody and brokerage fees. AUM decreased by \$0.4 billion to \$5.0 billion as at December 31, 2022, compared to \$5.5 billion as at December 31, 2021, driven by reduced discretionary portfolio values in Bermuda and Cayman and the impact of the strengthening of the USD on the Channel Islands discretionary portfolio values. Asset management fees earned remained flat at \$29.7 million compared to 2021.

2021 vs. 2020

Asset management fees are generated primarily from management fees earned from Butterfield Funds and discretionary portfolios, as well as custody and brokerage fees. AUM were relatively unchanged at \$5.5 billion as at December 31, 2021, compared to \$5.6 billion as at December 31, 2020. Asset management fees earned increased by \$0.7 million or 2.4% in 2021, compared to 2020. This was driven by an increase in brokerage fees coupled with market growth and new business, primarily in the Channel Islands and Cayman Islands.

Banking

We provide a full range of community, commercial, and private banking services in select jurisdictions. Banking services are offered to individuals and small to medium-sized businesses through branch locations, internet banking, automated teller machines, debit and credit cards, and mobile banking in Bermuda and the Cayman Islands, while private banking services are offered in Bermuda, the Cayman Islands, and Guernsey. Banking revenues reflect loan, transaction processing, and other fees earned in these jurisdictions.

Banking fee revenues increased by 10.0% in 2022 to \$57.1 million, compared to \$51.9 million in 2021, primarily due to volume-driven increases in both banking and foreign exchange revenue coupled with one-off loan restructuring and breakage fees.

Banking fee revenues increased by 9.7% in 2021 to \$51.9 million, compared to \$47.3 million in 2020, primarily due to volume-driven increases from increased economic activity and higher facility non-utilization and one-off breakage fees.

Foreign Exchange

We provide foreign exchange services in the normal course of business in all jurisdictions. The major contributors to foreign exchange revenues are Bermuda and the Cayman Islands, accounting for 81% of our foreign exchange revenue (2021: 78%; 2020: 79%). We do not maintain a proprietary trading book. Foreign exchange income is generated from client-driven transactions and totaled \$47.8 million in 2022, compared to \$43.4 million in 2021 and \$37.2 million in 2020. The \$4.4 million increase from 2021 to 2022 and \$6.3 million increase from 2020 to 2021 were primarily due to volume-driven increases driven by market volatility in 2022 and increased economic activity in 2021.

Trust

We provide both personal and institutional fiduciary services from our operations in Bermuda, The Bahamas, the Cayman Islands, Guernsey, Singapore and Switzerland. Revenues are derived from a combination of fixed fees, fees based on the size and complexity of the trust relationship and fees based on time spent in relation to the range of personal trust and company administration services and pension and employee benefit trust services we provide.

In 2022, trust revenues represented 25.3% of our non-interest income, slightly down from 26.7% in 2021. In 2022, trust revenues totaled \$52.3 million, \$0.6 million lower than 2021. This was driven by lower contributions by the Channel Islands and UK segment impacted by the strengthening USD as well as lower special and accounting fees charged. This was partially offset by net new business and increased activity-based fees charged in Bermuda and Cayman.

In 2021, trust revenues represented 26.7% of our non-interest income, down from 27.5% in 2020. In 2021, trust revenues totaled \$52.9 million, an increase of \$2.2 million or 4.4% over 2020. This increase was driven primarily by higher activity-based fees.

Trust AUA remained relatively flat at \$106.2 billion at the end of 2022 compared to the end of 2021.

Custody and Other Administration Services

Custody fees are generally based on market values of assets in custody, the volume of transactions and flat fees for other services rendered. We provide custody services from our offices in Bermuda, Guernsey, and Jersey. In 2022, revenues were \$13.6 million, a decrease of \$1.6 million from 2021 due to lower market values impacting the AUA. From 2020 to 2021, revenues increased by \$1.4 million due to the on-boarding of new business.

Total AUA for the custody and other administration services business were \$32.2 billion on December 31, 2022, a decrease from \$36.8 billion as at December 31, 2021 and \$32.4 billion as at December 31, 2020.

Other Non-Interest Income

The components of our other non-interest income for the years ended December 31, 2022, 2021 and 2020 are set forth in the following table:

(in millions of \$)	Year ended December 31			Dollar Change		Percent Change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Net share of earnings from equity method investments	—	0.1	0.6	(0.1)	(0.4)	(100.0)%	(66.7)%
Rental income	1.8	2.2	1.7	(0.4)	0.5	(18.2)%	29.4 %
Other	4.1	2.5	3.3	1.6	(0.8)	64.0 %	(24.2)%
Total other non-interest income	5.9	4.8	5.6	1.1	(0.8)	22.9 %	(14.3)%

In 2021, we recorded our net share of earnings from equity method investments as a gain of \$0.1 million, a \$0.4 million decrease due to lower equity pick-up by equity method investments. Rental income decreased by \$0.4 million to \$1.8 million in 2022 due to a reduction in tenants as Bermuda's Head Office undergoes refurbishment. In 2021, rental income increased by \$0.5 million from 2020 to 2021 due to increased sub-let income in the Channel Islands. Increases in the "Other" category are due to the scheduled recognition of long-held unclaimed assets.

Non-Interest Expenses

Expense management continued to be a key focus in 2022 with management targeting a 60% efficiency ratio through the cycle. Total non-interest expenses in 2022 were \$331.6 million compared to \$333.9 million in 2021 and \$344.6 million in 2020. These figures include non-core expenses in 2022, 2021 and 2020 of \$1.7 million, \$1.8 million and \$8.0 million, respectively.

After adjusting for these non-core items, 2022 core expenses decreased by \$2.2 million or 0.7% with a corresponding decrease in the core efficiency ratio to 58.9% from 65.5% in 2021, driven by the uplift in revenue in the rising rate environment. From 2020 to 2021, core non-interest expenses decreased by \$4.5 million with a corresponding decrease in the core efficiency ratio to 65.5% from 66.0% in 2020.

In 2022, salaries and other employee benefits accounted for 50.1% of non-interest expenses, with technology and communications and property making up 26.6% combined.

The following table presents the components of non-interest expenses for the years ended December 31, 2022, 2021 and 2020:

(in millions of \$)	Year ended December 31			Dollar Change		Percent Change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Salaries and other employee benefits	166.2	161.3	173.7	4.9	(12.3)	3.0 %	(7.1)%
Technology and communications	56.7	63.8	65.2	(7.1)	(1.3)	(11.1)%	(2.0)%
Professional and outside services	19.6	21.4	21.3	(1.8)	0.1	(8.2)%	0.6 %
Property	31.4	30.9	29.4	0.6	1.5	1.9 %	5.0 %
Indirect taxes	22.0	22.1	21.3	(0.1)	0.8	(0.5)%	3.6 %
Non-service employee benefits expense	3.8	3.9	2.6	(0.1)	1.2	(2.9)%	47.3 %
Marketing	6.4	4.6	4.4	1.8	0.1	39.4 %	2.7 %
Amortization of intangible assets	5.7	6.0	5.8	(0.3)	0.2	(5.5)%	3.3 %
Other non-interest expenses	19.8	19.9	20.9	(0.1)	(1.0)	(0.6)%	(4.7)%
Total non-interest expenses	331.6	333.9	344.6	(2.3)	(10.7)	(0.7)%	(3.1)%
Non-core items (Non-GAAP)	(1.7)	(1.8)	(8.0)	0.1	6.2	(5.6)%	(77.5)%
Core non-interest expenses (Non-GAAP)	329.9	332.1	336.6	(2.2)	(4.5)	(0.7)%	(1.3)%

For a full reconciliation of GAAP net income to core net income, please see Item 5.A. "Operating Results — Reconciliation of Non-GAAP Financial Measures".

Salaries and Other Employee Benefits

Total salaries and other employee benefits costs were \$166.2 million in 2022, an increase of \$4.9 million compared to 2021. Included in 2022 were \$1.0 million of non-core expenses in relation to the departure of a senior executive. Included in 2021 were \$1.5 million of non-core expenses in relation to redundancy costs associated with the transfer of Channel Islands banking operations functions from Mauritius to Butterfield's service centers in Canada and Guernsey. In 2020, \$8.0 million relates to COVID-19 related cost restructure programs (voluntary separation and redundancy costs).

Core salaries, which exclude these amounts, and other employee benefits costs were \$165.2 million in 2022, up \$5.3 million compared to \$159.9 million in 2021 primarily due to higher staff incentive accruals and inflationary salary adjustments. From 2020 to 2021, core salaries decreased by \$5.8 million primarily due to the resulting benefits from previous restructuring programs.

Headcount on a full-time equivalency basis at the end of 2022 was 1,341, compared to 1,277 in 2021 and 1,314 in 2020. The increase in 2022 from 2021 was mostly a result of the Service Center expansion in Halifax and Mauritius. The decrease in 2021 from 2020 was a result of the COVID-19 related cost restructuring program, which included voluntary separation, early retirement and redundancies across all operating segments.

Technology and Communications

Technology and communication costs reflect expenses relating to the support for our IT infrastructure and decreased by \$7.1 million from 2021 to 2022 and by \$1.3 million from 2020 to 2021, all due to the depreciation of the Bank's core banking system outpacing costs associated with the new technology projects.

Professional and Outside Services

Professional and outside services primarily include consulting, legal, audit and other professional services. Professional and outside services costs were \$19.6 million in 2022, lower compared to \$21.4 million in 2021 due to lesser outsourced consultancy and legal professionals. From 2020 to 2021, professional and outside services costs were relatively flat.

Property

Property costs, which reflect occupancy expenses, building maintenance, and depreciation of property, plant and equipment, increased by \$0.6 million from 2021 to 2022 and by \$1.5 million from 2020 to 2021, driven by the continued investment in property projects and renovations of our Head Office branch in Bermuda.

Indirect Taxes

These taxes reflect taxes levied in the jurisdictions in which we operate, including employee-related payroll taxes, customs duties, and business licenses. In 2022, the expense was \$22.0 million which remains flat when compared with 2021. From 2020 to 2021, indirect taxes increased by \$0.8 million which mainly relates to the elevated deposit and gross asset volumes which impact deposit insurance and financial services tax contributions, increased insurance costs, banking license fees and partially offset by lower payroll taxes due to reduced headcount. Of the \$22.0 million in indirect taxes, \$17.2 million was paid to the Bermuda government agencies for payroll tax, business licenses, deposit insurance, land taxes, and financial services tax and \$4.8 million was paid to other governments for business licenses, insurance tax, land taxes and work permit fees.

Marketing

Marketing expenses reflect costs incurred in advertising and promoting our products and services. Marketing expenses totaled \$6.4 million in 2022, an increase of \$1.8 million compared to 2021 due to increased sponsored event costs during the year. From 2020 to 2021, marketing expenses were relatively flat.

Amortization of Intangible Assets

Intangible assets relate to client relationships acquired from business acquisitions and are amortized on a straight-line basis over their estimated useful lives, not exceeding 15 years. The estimated lives of these acquired intangible assets are re-evaluated annually and tested for impairment. The amortization expense associated with intangible assets was \$5.7 million in 2022 compared to \$6.0 million in 2021 and \$5.8 million in 2020. Amortization decreased by \$0.3 million from 2021 to 2022 and increased by \$0.2 million from 2020 to 2021, all due to the impact of foreign currency exchange rates.

Other Non-Interest Expenses

(in millions of \$)	For the year ended December 31			Dollar Change		Percent Change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Stationery & supplies	1.0	1.0	1.2	—	(0.2)	2.1 %	(13.5)%
Custodian & handling	3.4	3.4	3.0	(0.1)	0.4	(1.6)%	14.5 %
Charitable donations	1.1	1.1	1.6	(0.1)	(0.4)	(6.1)%	(27.6)%
Professional lines insurance	4.2	3.9	3.7	0.3	0.3	6.6 %	7.3 %
Other expenses	10.1	10.4	11.5	(0.3)	(1.1)	(2.6)%	(9.5)%
Total other non-interest expenses	19.8	19.9	20.9	(0.1)	(1.0)	(0.6)%	(4.7)%

Other non-interest expenses of \$19.8 million in 2022 were relatively flat compared to 2021.

From 2020 to 2021, other non-interest expenses decreased by \$1.0 million, driven by lower operational losses and write-offs.

Income Taxes

Each jurisdiction in which we operate is subject to different corporate income tax laws. See Item 3.D. "Risk Factors - Regulatory and Tax-Related Risks". We are incorporated in Bermuda as a local company and, pursuant to Bermuda law, not obligated to pay any direct corporate taxes in Bermuda on either income or capital gains. Our subsidiaries in the Cayman Islands and The Bahamas are not subject to any taxes on either income or capital gains under current laws applicable in the respective jurisdictions. In general, entities in Bermuda and the Cayman Islands are not subject to corporate income taxes but are required to pay higher rates of indirect taxes (included above) such as license fees and, in Bermuda, payroll taxes and import duties.

Our subsidiaries in the UK, Guernsey, Jersey, Switzerland, Canada, Singapore, and Mauritius are subject to the tax laws of those jurisdictions. See "Note 25 Income taxes" in the Audited Consolidated Financial Statements for a reconciliation between the effective income tax rate and the statutory income tax rate.

In 2022, income tax expense netted to an expense of \$3.7 million compared to \$3.1 million in 2021. The increase of \$0.6 million in 2022 was driven by increased profitability in our Channel Islands and UK segment and partially offset by changes in the deferred tax valuation allowance. The increase of \$0.7 million in 2021 was driven by an increase in profitability in our Guernsey subsidiary, changes in the deferred tax valuation allowance and offset by the impact of a change in tax rates.

Consolidated Balance Sheet and Discussion

The following table shows the balance sheet as reported as at December 31, 2022 and 2021:

(in millions of \$)	As at December 31		Dollar Change	Percent Change
	2022	2021		
Assets				
Cash and cash equivalents	2,101	2,180	(79)	(3.6)%
Securities purchased under agreement to resell	60	96	(36)	(37.5)%
Short-term investments	884	1,199	(315)	(26.3)%
Investment in securities	5,727	6,237	(510)	(8.2)%
Loans, net of allowance for credit losses	5,096	5,241	(145)	(2.8)%
Premises, equipment and computer software	146	139	7	5.0 %
Goodwill and intangibles	74	86	(12)	(14.0)%
Other assets	217	158	59	37.3 %
Total assets	14,306	15,335	(1,029)	(6.7)%
Liabilities				
Total deposits	12,991	13,870	(879)	(6.3)%
Total other liabilities	278	316	(38)	(12.0)%
Long-term debt	172	172	—	— %
Total liabilities	13,441	14,358	(917)	(6.4)%
Common shareholders' equity	865	977	(112)	(11.5)%
Total shareholders' equity	865	977	(112)	(11.5)%
Total liabilities and shareholders' equity	14,306	15,335	(1,029)	(6.7)%

	As at December 31	
	2022	2021
Capital Ratios		
Risk-weighted assets	4,843	5,101
Tangible common equity (TCE)	790	891
Tangible assets (TA)	14,232	15,249
TCE/TA	5.6 %	5.8 %
Common Equity Tier 1	20.3 %	17.6 %
Total Tier 1	20.3 %	17.6 %
Total Capital	24.1 %	21.2 %
Leverage ratio	6.7 %	5.6 %

We maintain a liquid balance sheet and are well capitalized. As at December 31, 2022, total cash and cash equivalents, short-term investments and investment in securities represented \$8.8 billion, or 61.3% of total assets, down from 63.3% at the end of 2021. Shareholders' equity at December 31, 2022 was \$864.8 million, down from \$977.5 million at the end of 2021 due primarily to the unrealized losses on AFS investments included in AOCIL in 2022 as a result of rising long-term US dollar interest rates and partially offset by net income for the year net of dividends paid and shares repurchased.

Total assets decreased by \$1.0 billion to \$14.3 billion from 2021 to 2022, primarily due to the decrease in depositor funding which is reflected in the decrease in cash and cash equivalents, short-term investments and investment in securities balances.

As at December 31, 2022, our capital ratios were strong, and were significantly in excess of regulatory requirements. The Bank's regulatory capital is determined in accordance with current Basel III guidelines as issued by the BMA.

The TCE/TA ratio at the end of 2022 was 5.6% (2021: 5.8%), while the CET1 and total Tier 1 capital ratios at the end of 2022 were 20.3% (2021: 17.6%) and 20.3% (2021: 17.6%), respectively. These ratios continue to remain in excess of regulatory minimums at December 31, 2022.

Cash and cash equivalents, Securities Purchased Under Agreement to Resell and Short-Term Investments

We only place deposits with highly-rated institutions and ensure that there is appropriate geographic and sector diversification in our exposures. Limits are set for aggregate geographic exposures and for every counterparty for which we place deposits. Those limits are monitored and reviewed by our Credit Risk Management division and approved by the Financial Institutions Committee. We define cash and cash equivalents to include cash on hand, cash items in the process of collection, amounts due from correspondent banks and liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in fair value. Such investments are those with less than three months maturity from the date of acquisition and include unrestricted term deposits, certificates of deposit and treasury bills. Investments of a similar nature that are either restricted or have a contractual maturity of more than three months but one year or less are classified as short-term investments. Securities purchased under agreement to resell are treated as collateralized lending transactions, and are referred to as repurchase agreements. We utilize repurchase agreements to manage liquidity. The risks of these transactions include changes in the fair value in the securities posted or received as collateral and other credit-related events. The Bank manages these risks by ensuring that the collateral involved is appropriate and by monitoring the value of the securities posted or received as collateral on a daily basis.

As at December 31, 2022, cash and cash equivalents, securities purchased under agreements to resell and short-term investments were \$3.0 billion, compared to \$3.5 billion as at December 31, 2021. The decrease from 2021 to 2022 is primarily due to the decrease in depositor funding.

See "Note 3: Cash and cash equivalents", "Note 4: Short-term investments" and "Note 12: Credit related arrangements, repurchase agreements and commitments" to our audited consolidated financial statements as at and for the year ended December 31, 2022 for additional tables and information.

Investment in Securities

Our investment policy requires management to maintain a portfolio of securities that provide the liquidity necessary to cover our obligations as they come due, and mitigate our overall exposure to credit and interest rate risk, while achieving a satisfactory return on the funds invested. The securities in which we invest are limited to securities that are considered investment grade. Securities in our investment portfolio are accounted for as either equity securities at fair value, AFS or HTM. Investment policies are approved by the Board, governed by the Group Asset and Liability Committee and monitored by Group Market Risk, a department of the Group Risk Management division.

Consistent with industry and rating agency designations, we define investment grade as "BBB" or higher. As at December 31, 2022, 100% (2021: 100%) of our total investments were investment grade. Of these securities, 100% (2021: 100%) are rated "A" or higher.

The following table presents the carrying value of investment securities by balance sheet category as at December 31, 2022 and 2021:

(in millions of \$)	As at December 31		Dollar Change	Percent Change
	2022	2021		
Available-for-sale	1,989	3,474	(1,485)	(42.7)%
Held-to-maturity	3,738	2,763	975	35.3 %
Total Investment in Securities	5,727	6,237	(510)	(8.2)%

The investments were placed almost exclusively in US government and federal agency securities totaling \$4.9 billion, based upon carrying value, or 95.2% of the total investment portfolio, as at December 31, 2022. Total net unrealized losses in the investment portfolio were \$761.3 million, compared to net unrealized gains of \$0.4 million at the end of 2021. The movement in unrealized losses for the year was a result of rising long-term US dollar interest rates. The 10-year treasury rate was 3.87% as of December 31, 2022 compared to 1.51% the year before.

Equity securities at fair value remains flat at \$0.2 million at the end of 2022. As at December 31, 2022, the equity securities at fair value consisted of real estate mutual funds.

AFS securities totaled \$2.0 billion at the end of 2022, compared to \$3.5 billion at the end of 2021. As at December 31, 2022, 86.1% or \$1.7 billion (2021: 90.5%, or \$3.1 billion) of AFS securities consisted of holdings of securities issued by the US government and federal agencies. As at December 31, 2022, the remaining 13.9%, or \$276.1 million of AFS securities (2021: 9.5% or \$330.1 million) was comprised primarily of guaranteed student loan-backed securities of 0.3%, or \$5.6 million (2021: 0.4%, or \$13.2 million), debt securities issued by non-US governments of 12.6%, or \$251.5 million (2021: 8.3%, or \$289.6 million) and residential mortgage-backed securities of 1.0%, or \$19.0 million (2021: 0.8%, or \$27.3 million). The overall decrease in US government and federal agency securities was due to the Q1 and Q2 transfers totaling \$1.0 billion of securities from the AFS to HTM portfolio at fair value and the increase in total net unrealized losses from rising long-term US dollar interest rates. Securities were transferred from the AFS to HTM portfolio in order to mitigate any further downward impacts to AOCIL as a result of the rapidly rising interest rate environment.

HTM investments were \$3.7 billion as at December 31, 2022 (2021: \$2.8 billion) and consisted entirely of mortgage-backed securities issued by US federal agencies that management does not intend to sell before contractual maturity. The increase in US government and federal agency securities was due to the aforementioned transfer of \$1.0 billion of securities from the AFS to HTM portfolio at fair value and offset by scheduled paydowns.

Investment Valuation — Impairment and Credit Loss Considerations

Securities in unrealized loss positions are analyzed as part of management's ongoing assessment of impairment and credit losses. For debt securities, where management does not expect to recover the entire amortized cost basis of the security and intends to sell such securities or it is more likely than not that the Bank will be required to sell the securities before recovering the amortized cost, it recognizes an impairment loss equal to the full difference between the amortized cost basis and the fair value of those securities through the income statement. Following the recognition of impairment, the security's new amortized cost basis is the previous basis less impairment.

When management does not intend to sell or it is more likely than not that the Bank will hold such securities until recovering the amortized cost, management determines whether any credit losses exist. See "Note 2.H: Investments" and "Note 2.J: Allowance for Credit Losses".

While management sold AFS securities during 2022 and 2021, these securities were sold for a net loss of minimal amount in 2022 and \$0.2 million in 2021. The sale in 2022 involved asset-backed securities-student loans. The sale in 2021 involved selling US agency securities as part of a portfolio rebalancing strategy in order to manage duration and interest rate sensitivity. This also included selling lower yielding explicitly guaranteed US agency securities and purchasing higher yielding implicitly guaranteed US agency securities. Management does not have the intention or does not foresee a more likely than not scenario where the Bank will be required to sell any further securities which are in an unrealized loss position, and accordingly, management has concluded that these sales are not credit loss indicators for any remaining securities in a loss position as at December 31, 2022.

See "Note 5: Investment in securities" to our audited consolidated financial statements as at December 31, 2022 for additional tables and information.

Loans

The loan portfolio decreased from \$5.2 billion at the end of 2021 to \$5.1 billion as at December 31, 2022. The decrease was driven by the impact of the strengthening of the US dollar on GBP denominated balances, the early repayment of a number of commercial facilities and partially offset by the extension of a government facility in the Cayman Islands.

The loan portfolio represented 35.6% of total assets as at December 31, 2022 (2021: 34.2%), while loans as a percentage of total deposits increased from 37.8% at the end of 2021 to 39.2% at the end of 2022. The increase in both ratios were attributable principally to a decrease in deposit balances at December 31, 2022 driven by the expected withdrawal of some pandemic-related deposits as well as the impact of the strengthening US dollar on non-US dollar denominated balances.

Allowance for credit losses as at December 31, 2022 totaled \$25.0 million, a decrease of \$3.1 million from the prior year. The movement was driven by a decrease in provisioned non-accrual loans, net paydowns and foreign exchange movements in the portfolio. This was partially offset by slightly weaker economic forecasts and the extension of a large, long-term government facility in the Cayman Islands.

Gross non-accrual loans totaled \$63.1 million as at December 31, 2022, \$2.0 million higher than \$61.0 million as at December 31, 2021, and represented 1.2% of the total loan portfolio as at December 31, 2022, compared to 1.2% as at December 31, 2021. The increase in non-accrual loans was driven by a few residential mortgages in the Channel Islands and UK segment moving into non-accrual and partially offset by a number of Bermuda residential mortgages improving to current status. In 2022, we held OREO amounting to \$0.8 million (2021: \$0.7 million), a decrease of \$0.1 million due to the foreclosure of three loans in the Bermuda and Channel Islands and UK segments and which was partially offset by the sale of three properties in the Bermuda and Channel Islands and UK segments.

Overall, the credit quality of the Bank's lending portfolio held steady from December 31, 2021 to December 31, 2022.

Government

Loans to governments were \$281.5 million, which was a \$21.9 million increase from 2021, due primarily to the extension of a long-term facility to the Cayman Islands Government and partially offset by the repayment of facilities in Bermuda and the Channel Islands.

Commercial

The commercial and industrial loan portfolio includes loans and overdraft facilities advanced primarily to corporations and small and medium-sized entities, which are generally not collateralized by real estate and where loan repayments are expected to flow from the operation of the underlying businesses.

Commercial real estate loans are offered to real estate investors, developers and builders based primarily in Bermuda and the Cayman Islands. To manage our credit exposure on such loans, the principal collateral is real estate held for commercial purposes and is supported by a registered mortgage. Cash flows from the properties, primarily from rental income, are generally supported by non-cancellable long-term leases to high quality international businesses. These cash flows are generally sufficient to service the loan. The portfolio decreased by \$65.8 million to \$627.3 million at December 31, 2022.

Commercial loans outstanding as at December 31, 2022 were \$441.9 million, which represented a decrease of \$36.4 million from the previous year driven by the repayment of two facilities in Bermuda and Cayman and the maturity of a facility in Bermuda.

Residential

The residential mortgage portfolio comprises mortgages to clients with whom we are seeking to establish (or already have) a comprehensive financial services relationship. It includes mortgages to individuals and corporate loans secured by residential property.

All mortgages were underwritten utilizing our stringent credit standards. See Item 5.A. "Operating Results". Residential loans consist of conventional home mortgages and equity credit lines.

As at December 31, 2022, residential mortgages totaled \$3.6 billion (or 69.7% of total gross loans), a \$52.8 million decrease from December 31, 2021. This decrease was attributed mainly to the impact of the strengthening USD exchange rate on the Channel Islands and UK mortgage books, repayments exceeding new loan growth in Bermuda and partially offset by net new loan growth in the Cayman Islands.

Other Loan Portfolios

We provide loans, as part of our normal banking business, in respect of automobile financing, consumer financing, credit cards, commercial financing, loans to financial institutions and overdraft facilities to retail, corporate and private banking clients in the jurisdictions in which we operate. As at December 31, 2022, other consumer loans totaled \$200.5 million (or 3.9% of total gross loans), a \$14.3 million decrease from December 31, 2021. This was primarily driven by the completion of residential construction projects in the Cayman Islands.

See "Note 6: Loans" and "Note 7: Credit risk concentrations" to our audited consolidated financial statements as at December 31, 2022 for more information on our loan portfolio and contractual obligations and arrangements.

Deposits

Deposits are our principal funding source for use in lending, investments and liquidity. We are a deposit-led bank and do not require the use of wholesale or institutional markets to fund our loan business. See Item 5.A. "Operating Results - Liquidity Risk" and "- Credit Risk". Deposit balances at the end of reporting periods can fluctuate due to significant balances that flow in and out from private trust, fund and insurance clients to meet quarter-end operational requirements.

The table below shows the year-end and average total deposit balances by jurisdiction for the year ended and as at December 31, 2022 and 2021:

(in millions of \$)	As at December 31		Dollar change	Average balance		Dollar change
	2022	2021		2022	2021	
Bermuda	4,488	4,511	(23)	4,658	4,616	42
Cayman Islands	4,293	4,612	(319)	4,437	4,400	37
Channel Island and the UK	4,210	4,747	(537)	4,208	4,724	(516)
Total deposits	12,991	13,870	(879)	13,303	13,740	(437)

Average total deposits decreased by \$0.4 billion to \$13.3 billion in 2022. On a year-end basis, total deposits were down by \$0.9 billion from \$13.7 billion at the end of 2021. The decrease in deposit balances was driven by the normalization of pandemic surge deposit levels and the impact of a strengthening US dollar on non-US dollar denominated deposits.

Demand deposits, which include checking accounts (both interest bearing and non-interest bearing), savings and call accounts, totaled \$9.9 billion, or 76.1% of total deposits at the end of 2022, compared to \$10.9 billion or 78.8%, at the end of 2021. Term deposits increased by \$0.2 billion to \$3.1 billion compared to the prior year. The cost of funds on deposits increased from 11 basis points in the full year ended 2021 to 34 basis points in 2022 primarily due to higher market interest rates. Average non-interest bearing deposits increased to \$3.0 billion from \$2.9 billion in 2021.

Included in total deposits are deposits from banks of \$12.6 million at the end of 2022, down from \$26.4 million at the end of 2021.

See "Note 10: Deposits" to our audited consolidated financial statements as at December 31, 2022 for additional tables and information.

Borrowings

We have no issuances of certificates of deposit ("CD"), commercial paper ("CP") or senior notes outstanding and have no CD or CP issuance programs. We use funding from the inter-bank market as part of interest rate risk and liquidity management. As at December 31, 2022, deposits from banks totaled \$12.6 million, \$13.8 million lower than the prior year.

Employee Future Benefits

We maintain trustee pension plans including non-contributory defined benefit plans and a number of defined contribution plans, and provide post-retirement healthcare benefits to our qualifying retirees. The defined benefit provisions under the pension plans are generally based upon years of service and average salary during the final years of employment. The defined benefit pension and post-retirement healthcare plans are not open to new participants, are non-contributory and thus the funding required is provided by us, based upon the advice of an independent actuary. The defined benefit pension plans are in the Bermuda, Guernsey and UK jurisdictions, and the defined benefit post-retirement medical plan is in Bermuda. The Bank also has a residual obligation in addition to its defined contribution plan in Mauritius.

Effective December 31, 2011, the Bermuda defined benefit pension benefits were amended to freeze credited service and final average earnings for remaining active members. Effective January 2012, all the participants of the Bermuda defined benefit pension plan are inactive and in accordance with GAAP, the net actuarial loss of the Bermuda defined benefit pension plan is amortized over the estimated average remaining life expectancy of the inactive participants of 22.8 years. Prior to all Bermuda participants being inactive, the net actuarial loss of the Bermuda defined benefit pension plan was amortized to net income over the estimated average remaining service period for active members of 4.5 years.

Effective September 30, 2014, the defined benefit pension benefits of our Guernsey operations were amended to freeze credited service and final average earnings for remaining active members. The benefits amendment resulted in a further reduction in the Guernsey defined benefit pension liability of \$4.6 million as at September 30, 2014.

Effective October 2014, all of the participants of the Guernsey defined benefit pension plan are inactive and in accordance with GAAP, the net actuarial loss of the Guernsey defined benefit pension plan will be amortized over the estimated average remaining life expectancy of the inactive participants of 39 years. Prior to all Guernsey participants being inactive, the net actuarial loss of the Guernsey defined benefit pension plan was amortized to net income over the estimated average remaining service period for active members of 15 years.

For the year ended December 31, 2014, numerous changes in the plan provisions were made to align the plan provisions with our administrative practices resulting in a further increase in the Bermuda defined benefit post-retirement healthcare plan liability of \$7.9 million. We amortize prior service credit resulting from plan amendments that occurred when plan members were active employees, on a linear basis over the expected average remaining service period (to full eligibility) of active members expected to receive benefits under the plan. Such remaining service periods are as follow: 3.1 years for the 2010 plan amendments and 4.6 years for the 2011 plan amendments. Plan amendments occurring in 2014 resulted in the recognition of new prior service cost on December 31, 2014 on a plan for which substantially all members are now inactive and, in accordance with GAAP, we have elected to amortize this new prior service cost on a linear basis over 21 years, which is the average remaining life expectancy of members eligible for benefits under the plan at the time of the amendments.

As at December 31, 2022, we had a net obligation for employee future benefits in the amount of \$92.0 million, down \$34.2 million (27.1%) from \$126.2 million at the end of 2021. The decrease was driven primarily by experienced gains from increases in discount rate assumptions used to measure the obligation.

See "Note 11: Employee benefit plans" to our audited consolidated financial statements as at December 31, 2022 for additional tables and information.

Long-Term Debt, Interest Payments and Maturities

We had outstanding issuances of long-term debt with a carrying value of \$172.3 million as at December 31, 2022 and \$171.9 million as at December 31, 2021, all issued in US Dollars. On June 11, 2020, the Bank issued US \$100 million of Subordinated Lower Tier II capital notes. The notes were issued at par and are due on June 15, 2030. The issuance was by way of a registered offering with US institutional investors. The notes are listed on the BSX in the specialist debt securities category. The proceeds of the issue were used, amongst other, to repay the entire amount of the US \$45 million outstanding subordinated notes series 2005-B which matured on July 2, 2020 and the entire amount of the US \$25 million outstanding subordinated notes series 2008-B which were eligible for redemption. As at December 31, 2022, all of our outstanding long-term debt was eligible for inclusion in our Tier 2 regulatory capital base, limited to 50% of Tier 1 capital.

The following table presents the contractual maturity, interest rates and principal outstanding as at December 31, 2022:

Long-term debt (in millions of \$)	Earliest date redeemable at the Bank's option	Contractual maturity date	Interest rate until date redeemable	Interest rate from earliest date redeemable to contractual maturity	Principal outstanding
2018 issuance	June 1, 2023	June 1, 2028	5.25%	3 months US\$ LIBOR + 2.255%	75.0
2020 issuance	June 15, 2025	June 15, 2030	5.25%	3 months US\$ SOFR + 5.060%	100.0
Unamortized debt issuance costs					(2.7)
Total					172.3

See "Note 19: Long-term debt" to our audited consolidated financial statements as at December 31, 2022 for additional information.

Other Liabilities

Other liabilities include operating lease liabilities, derivative liabilities, current employee salaries and benefits payable and related payroll tax, as well as sundry liabilities. Other liabilities decreased by \$3.5 million to \$185.9 million as at December 31, 2022. The decrease was a result of decreased mark-to-market losses on derivatives and offset by higher sundry liabilities.

Leases

In the normal course of operation, the Bank enters into leasing agreements either as the lessee or the lessor, mostly for office and parking spaces as well as for small office equipment. The Bank recognizes right-of-use assets and lease liabilities for operating leases. Lease liabilities are measured as the present value of future lease payments, including term renewals that are reasonably certain to occur, discounted using the Bank's incremental borrowing rate. The Bank has used the rate of its June 11, 2020 debt issuance as the incremental borrowing rate for existing lease liabilities and, for any new leases commencing in 2023 but recognized as at December 31, 2022, has adjusted this rate upwards to reflect the movements in relevant reference rate indices since this issuance.

The terms of the existing leases, including renewal options that are reasonably certain to be exercised, extend up to the year 2035. Certain lease payments will be adjusted during the related leases' terms based on movements in the relevant consumer price index.

See "Note 13: Leases" to our audited consolidated financial statements as at December 31, 2022 for additional information.

Repurchase Agreements

We also obtain funds from time to time from the sale of securities to institutional investors under repurchase agreements. In a repurchase agreement transaction, we will generally pledge investment securities as collateral in a borrowing transaction, agreeing to repurchase the identical security on a specified later date, generally not more than 90 days, at a price greater than the original sales price. The difference between the sale price and repurchase price is the cost of the use of the proceeds, or interest expense. The investment securities underlying these agreements may be delivered to securities dealers who arrange such transactions as collateral for the repurchase obligation. Repurchase agreements represent a cost competitive funding source and also provide liquidity on agency paper for us. However, we are subject to the risk that the borrower of the securities may default at maturity and not return the collateral. In order to minimize this potential risk when entering into such transactions, we generally deal with large, established investment brokerage firms with whom we have master repurchase agreements. Repurchase transactions are accounted for as collateralized financing arrangements rather than as sales of such securities, and the obligation to repurchase such securities is reflected as a liability in our consolidated financial statements. As at December 31, 2022 and 2021, there were no repurchase agreements outstanding.

Shareholders' Equity

Shareholders' equity decreased during the year ended December 31, 2022 by \$112.7 million to \$864.8 million.

Increases totaling \$273.0 million included:

- \$214.0 million of net income for the year;
- \$41.9 million from adjustments to employee benefit plans; and
- \$17.1 million for share-based compensation and settlements.

The increases were offset by the following decreases of \$385.7 million:

- \$87.3 million of common share dividends;
- \$3.9 million from net increases in treasury shares;
- \$4.8 million from net change in unrealized gains (losses) on translation of net investment in foreign operations;
- \$91.3 million from net change in unrealized gains (losses) on HTM investments; and
- \$198.4 million from net change in unrealized gains (losses) on AFS investments.

Segment Overview

The Bank is managed by the Chairman & CEO on a geographic basis. The Bank presents four reportable segments, three geographical and one other: Bermuda, Cayman Islands, Channel Islands and the UK, and Other. The Other segment is composed of several non-reportable operating segments that have been aggregated in accordance with GAAP. Each reportable segment has a managing director who reports to the Chairman & CEO. The Chairman & CEO and the segment managing director have final authority over resource allocation decisions and performance assessment.

Transactions between segments are accounted for on an accrual basis and are all eliminated upon consolidation. The Bank generally does not allocate assets, revenues and expenses among its business segments, with the exception of certain corporate overhead expenses and loan participation revenue and expenses. Loan participation revenue and expenses are allocated pro-rata based on the percentage of the total loan funded by each jurisdiction participating in the loan.

Bermuda (Including Head Office)

For more than 150 years, Bermuda has served as home to our headquarters and remains our largest jurisdiction in terms of number of employees and business volume. The following table provides certain financial information for our Bermuda segment for the years ended December 31, 2022, 2021 and 2020.

Summary Income Statement

(in millions of \$)	For the year ended December 31			Dollar change		Percent change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Net interest income	161.9	146.0	159.6	15.9	(13.6)	10.9 %	(8.5)%
Provision for credit recoveries (losses)	(1.2)	2.2	(8.8)	(3.4)	11.0	(154.5)%	125.0 %
Non-interest income	87.9	84.6	85.2	3.3	(0.6)	3.9 %	(0.7)%
Net revenue before other gains (losses)	248.6	232.8	236.0	15.8	(3.2)	6.8 %	(1.4)%
Operating expenses	(188.7)	(186.8)	(192.8)	(1.9)	6.0	1.0 %	(3.1)%
Net income before other gains (losses)	59.9	46.0	43.2	13.9	2.8	30.2 %	6.5 %
Total other gains (losses)	—	0.9	2.0	(0.9)	(1.1)	(100.0)%	(55.0)%
Net income	59.9	46.9	45.2	13.0	1.7	27.7 %	3.8 %

Summary Balance Sheet

(in millions of \$)	As at December 31			
	2022	2021	Dollar change	Percent change
Total deposits	4,488	4,511	(23)	(0.5)%
Loans, net of allowance for credit losses	1,879	2,023	(144)	(7.1)%
Total assets	5,405	5,728	(323)	(5.6)%
Assets under administration				
Custody and other administration services	14,534	16,099	(1,565)	(9.7)%
Trust	57,617	54,452	3,165	5.8 %
Assets under management				
Butterfield Funds	1,529	1,531	(2)	(0.1)%
Other assets under management	2,046	2,272	(226)	(9.9)%
Total assets under management	3,575	3,803	(228)	(6.0)%
Number of employees	413	413	—	— %

2022 vs. 2021

Net income before other gains and losses was \$59.9 million for the year ended December 31, 2022, up by \$13.9 million from \$46.0 million in the prior year. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses increased by \$15.9 million to \$161.9 million in 2022, driven primarily by higher market interest rates across the yield curve.

There is a provision for credit losses of \$1.2 million in 2022 compared to a provision for credit recoveries of \$2.2 million in 2021. The movement is due to weaker macroeconomic forecasts impacting future expected credit loss estimates and charge-offs on a commercial facility.

Non-interest income increased by \$3.3 million to \$87.9 million in 2022. This was primarily due to higher banking income and foreign exchange revenue as a result of one-off breakage fees and increased volumes; increased asset management fees due to an increase in net asset values driven by rising rates and increased trust income driven by new business and accounting fees. These increases were partially offset by lower custody and other administration fees driven by declining AUAs from market declines and decreases in other income due to the timing of recognizing unclaimed assets.

Operating expenses increased by \$1.9 million to \$188.7 million in 2022 which was driven by the increase in staff related costs due to higher staff incentive accruals and costs associated with the departure of a senior executive recorded as a non-core item; increased professional and outside services costs due to an increase in inter-company charges related to increased staff levels in support centers and higher marketing costs driven by an increase in sponsored event costs. This was partially offset by a decrease in technology and communications cost due to the depreciation charges on the existing core banking system in the prior year continuing to outpace costs associated with the new technology projects.

Total assets as at December 31, 2022 were \$5.4 billion, down \$0.3 billion from December 31, 2021. Total deposits were \$4.5 billion in December 31, 2022, mostly flat from December 31, 2021, and loan balances at December 31, 2022 were \$144.0 million lower at \$1.9 billion, driven by the early repayment of government and other commercial facilities.

Client AUA for the trust and custody businesses as at December 31, 2022 were \$57.6 billion and \$14.5 billion, respectively, while assets under management were \$3.6 billion. This compares with \$54.5 billion, \$16.1 billion and \$3.8 billion, respectively, as at December 31, 2021.

2021 vs. 2020

Net income before other gains and losses was \$46.0 million for the year ended December 31, 2021, up by \$2.8 million from \$43.2 million in the prior year. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses decreased by \$13.6 million to \$146.0 million in 2021, due primarily to the impact of lower market rates across the yield curve as a result of the COVID-19 pandemic, which was partially offset by lower deposit costs.

There was a provision for credit recoveries of \$2.2 million in 2021 compared to a provision for credit losses of \$8.8 million in 2020. The movement is due to both the improvement in macroeconomic forecasts impacting future expected credit loss estimates and a reduction in non-performing loans.

Non-interest income decreased by \$0.6 million to \$84.6 million in 2021. This was primarily due to lower administration fees on loan participations; lower asset management fees and reduced dividends as a result of the liquidation of a private equity investment. These decreases were partially offset by increases in foreign exchange revenue, trust income and custody income from higher volumes, increased fees and onboarding of new clients during the year, respectively.

Operating expenses decreased by \$6.0 million to \$186.8 million in 2021 which was driven by the decrease in staff related costs due primarily to the resulting benefits from previous restructuring programs and partially offset by increases in property maintenance costs and non-service employee benefits expense due to increased costs from the post-retirement medical benefit plan.

Total assets as at December 31, 2021 were \$5.7 billion, down \$0.2 billion from December 31, 2020. Total deposits were \$4.5 billion in December 31, 2021, down \$0.3 billion from December 31, 2020, and loan balances at December 31, 2021 were relatively flat at \$2.0 billion.

Client AUA for the trust and custody businesses as at December 31, 2021 were \$54.5 billion and \$16.1 billion, respectively, while assets under management were \$3.8 billion. This compares with \$53.5 billion, \$16.1 billion and \$4.0 billion, respectively, as at December 31, 2020.

Cayman Islands

We are a leading financial services provider in the Cayman Islands, offering a comprehensive range of personal and corporate financial services. In addition to our strong retail presence, we are focused on the provision of wealth management services including private banking, asset management and trust services.

We have continued to enhance our client delivery channels and online and mobile banking platform upgrades. With four banking centers in desirable locations and 17 ATMs strategically located in Grand Cayman, we continue to be a leading provider of financial services locally. The following table provides certain financial information for our Cayman Islands segment for the years ended December 31, 2022, 2021 and 2020.

Summary Income Statement	For the year ended December 31			Dollar change		Percent change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
(in millions of \$)							
Net interest income	115.9	91.0	95.4	24.9	(4.4)	27.4 %	(4.6)%
Provision for credit (losses) recoveries	(0.6)	1.4	0.5	(2.0)	0.9	(142.9)%	180.0 %
Non-interest income	66.7	58.1	49.3	8.6	8.8	14.8 %	17.8 %
Net revenue before other gains (losses)	182.0	150.5	145.2	31.5	5.3	20.9 %	3.7 %
Operating expenses	(62.1)	(58.9)	(62.6)	(3.2)	3.7	5.4 %	(5.9)%
Net income before other gains (losses)	119.9	91.5	82.6	28.4	8.9	31.0 %	10.8 %
Total other gains (losses)	—	0.2	0.4	(0.2)	(0.2)	(100.0)%	(50.0)%
Net income	119.9	91.7	83.0	28.2	8.7	30.8 %	10.5 %

Summary Balance Sheet

(in millions of \$)	As at December 31			
	2022	2021	Dollar change	Percent change
Total deposits	4,293	4,612	(319)	(6.9)%
Loans, net of allowance for credit losses	1,270	1,137	133	11.7 %
Total assets	4,566	4,973	(407)	(8.2)%
Assets under administration				
Custody and other administration services	3,444	4,396	(952)	(21.7)%
Trust	6,614	8,008	(1,394)	(17.4)%
Assets under management				
Butterfield Funds	175	163	12	7.4 %
Other assets under management	622	702	(80)	(11.4)%
Total assets under management	797	866	(69)	(8.0)%
Number of employees	244	241	3	1.2 %

2022 vs. 2021

Net income before other gains and losses for the year ended December 31, 2022 was \$119.9 million, up by \$28.4 million from \$91.5 million in 2021. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses was \$115.9 million in 2022, up by \$24.9 million compared to 2021. The increase from 2021 to 2022 was due to higher market interest rates across the yield curve.

Provision for credit losses of \$0.6 million in 2022 represented a decrease of \$2.0 million compared to credit recoveries of \$1.4 million in 2021. The decrease was driven by the extension of a large, long-term government facility in the Cayman Islands as well as decreasing macroeconomic forecasts impacting future expected credit loss estimates.

Non-interest income was \$66.7 million, up \$8.6 million from 2021 driven by favorable volume variances impacting banking and foreign exchange revenue and the scheduled recognition of unclaimed assets.

Operating expenses increased by \$3.2 million from 2021 to \$62.1 million in 2022, driven by an increase in staff related costs due to higher staff incentive accruals coupled with higher property maintenance costs. The increases were partially offset by a decrease in technology and communications costs due to the existing core banking system being fully depreciated in the prior year.

Total assets as at December 31, 2022 were \$4.6 billion, down \$0.4 billion from December 31, 2021, reflecting lower depositor funding levels. Net loans were up at \$1.3 billion at December 31, 2022 mainly from the extension of a government facility in the Cayman Islands and residential mortgage growth.

Client AUA for the trust and custody businesses were \$6.6 billion and \$3.4 billion, respectively, while AUM were \$0.8 billion at December 31, 2022. This compares with \$8.0 billion, \$4.4 billion and \$0.9 billion, respectively, on December 31, 2021.

2021 vs. 2020

Net income before other gains and losses for the year ended December 31, 2021 was \$91.5 million, up by \$8.9 million from \$82.6 million in 2020. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses was \$91.0 million in 2021, down by \$4.4 million compared to 2020. The decrease from 2020 to 2021 was due primarily to the impact of lower market rates across the yield curve as a result of the COVID-19 pandemic and was partially offset by lower deposit costs.

Provision for credit recoveries of \$1.4 million in 2021 represented an increase of \$0.9 million compared to credit recoveries of \$0.5 million in 2020. The favorable variance was mainly due to the completion of a large condominium development and repayment of the associated construction loan during the year.

Non-interest income was \$58.1 million, up \$8.8 million from 2020 driven by increased economic activity impacting card service fee contributions and foreign exchange transactional volumes coupled with higher non-utilization fees on certain credit facilities.

Operating expenses decreased by \$3.7 million from 2020 to \$58.9 million in 2021, driven by a decrease in staff related costs due primarily to the resulting benefits from previous restructuring programs and lower technology and communications costs due to lower depreciation costs which is outpacing the new system roll-out. This was partially offset by an increase in professional and outside services due to higher intercompany charges from increased utilization of our Canadian service center.

Total assets as at December 31, 2021 were \$5.0 billion, up \$0.5 billion from December 31, 2020, reflecting higher depositor funding levels. Net loans were relatively stable at \$1.1 billion at December 31, 2021 with growth in residential mortgage lending offsetting repayments from commercial facilities.

Client AUA for the trust and custody businesses were \$8.0 billion and \$4.4 billion, respectively, while AUM were \$0.9 billion at December 31, 2021. This compares with \$7.6 billion, \$3.2 billion and \$0.8 billion, respectively, on December 31, 2020.

Channel Islands and the UK

The Channel Islands and UK segment includes the jurisdictions of Guernsey, Jersey (both in the Channel Islands), and the UK. In the Channel Islands, a broad range of services are provided to private clients and financial institutions including private banking, corporate banking and treasury services, internet banking, wealth management, mortgage lending and fiduciary services. In 2021, the segment entered the local mortgage market offering various products to local residents. The UK jurisdiction provides mortgages for high-value residential properties. The following table provides certain financial information for our Channel Islands and the UK segment for the years ended December 31, 2022, 2021 and 2020.

Summary Income Statement (in millions of \$)	For the year ended December 31			Dollar change		Percent change	
	2022	2021	2020	2021 to 2022	2020 to 2021	2021 to 2022	2020 to 2021
Net interest income	65.7	62.8	62.7	2.9	0.1	4.6 %	0.2 %
Provision for credit (losses) recoveries	(0.6)	(0.5)	(0.2)	(0.1)	(0.3)	20.0 %	150.0 %
Non-interest income	40.5	45.3	40.7	(4.8)	4.6	(10.6)%	11.3 %
Net revenue before other gains (losses)	105.6	107.6	103.2	(2.0)	4.4	(1.9)%	4.3 %
Operating expenses	(74.0)	(81.7)	(82.2)	7.7	0.5	(9.4)%	(0.6)%
Net income before other gains (losses)	31.6	25.9	21.0	5.7	4.9	22.0 %	23.3 %
Total other gains (losses)	1.5	(2.4)	(1.2)	3.9	(1.2)	162.5 %	100.0 %
Net income	33.1	23.5	19.8	9.6	3.7	40.9 %	18.7 %

Summary Balance Sheet (in millions of \$)	As at December 31			
	2022	2021	Dollar change	Percent change
Total deposits	4,210	4,747	(537)	(11.3)%
Loans, net of allowance for credit losses	2,017	2,171	(154)	(7.1)%
Total assets	4,626	5,235	(609)	(11.6)%
Assets under administration				
Custody and other administration services	14,203	16,263	(2,060)	(12.7)%
Trust	10,010	10,374	(364)	(3.5)%
Assets under management				
Butterfield Funds	48	64	(16)	(25.0)%
Other assets under management	629	766	(137)	(17.9)%
Total assets under management	677	830	(153)	(18.4)%
Number of employees	379	369	10	2.7 %

2022 vs. 2021

Our Channel Islands and UK segment posted net income before gains and losses of \$31.6 million in 2022, an increase of \$5.7 million when compared to 2021. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses reflected an increase of \$2.9 million to \$65.7 million in 2022, compared to \$62.8 million in 2021. The increase was due to higher market interest rates across the yield curve and partially offset by the strengthening of the US dollar.

Provision for credit losses remained mostly flat at \$0.6 million in 2022.

Non-interest income decreased by \$4.8 million to \$40.5 million in 2022 due to the strengthening of the US dollar as it was mostly flat in local GBP. In local currency, favorable volume-driven variances in banking and foreign exchange revenue were offset by decreased trust revenues as a result of lower special and accounting fees and decreased asset management revenues due to lower brokerage fees.

Operating expenses of \$74.0 million in 2022 were \$7.7 million lower than 2021, again due to the strengthening of the US dollar as it was mostly flat in local GBP. In local currency, a favorable professional and outside services fees variance driven by lower inter-company charges was offset by an increase in staff related costs due to higher staff incentive accruals and inflationary salary adjustments.

Total other gains (losses) for 2022 were gains of \$1.5 million, an increase of \$3.9 million compared to losses in 2021 due to losses related to defined benefit settlement accounting recorded in the previous year that did not re-occur.

Total assets of \$4.6 billion as at December 31, 2022, a decrease from \$5.2 billion as at December 31, 2021 reflecting lower depositor funding levels and the strengthening of the US dollar. Net loans decreased \$0.2 billion to \$2.0 billion at December 31, 2022 as a result of the aforementioned strengthening of the US dollar.

As at December 31, 2022, client AUA for the trust and custody businesses were \$10.0 billion and \$14.2 billion, respectively, while AUM were \$0.7 billion. This compares with \$10.4 billion, \$16.3 billion and \$0.8 billion, respectively, as at December 31, 2021.

2021 vs. 2020

Our Channel Islands and UK segment posted net income before gains and losses of \$25.9 million in 2021, an increase of \$4.9 million when compared to 2020. This increase is due principally to the following movements in net interest income, provision for credit losses, non-interest income and operating expenses:

Net interest income before provision for credit losses reflected an increase of \$0.1 million to \$62.8 million in 2021, compared to \$62.7 million in 2020. Favorable GBP/USD foreign exchange rates throughout 2021 more than offset the impact of lower market rates across the yield curve as a result of the COVID-19 pandemic which were also partially offset by lower deposit costs.

Provision for credit losses was up \$0.3 million to \$0.5 million in 2021, due to an increased provision on a residential mortgage which moved into non-accrual status.

Non-interest income increased by \$4.6 million to \$45.3 million in 2021, due to increases in foreign exchange revenue, asset management fees and custody income driven by a combination of higher volumes, increased fees and onboarding of new clients during the year.

Operating expenses of \$81.7 million in 2021 were \$0.5 million lower than 2020, driven by a decrease in staff related costs due primarily to the resulting benefits from previous restructuring programs and lower operational losses and write-offs. This was partially offset by an increase in professional and outside services due to higher intercompany charges from increased utilization of our Canada and Mauritius service centers and higher legal and professional fees.

Total other gains (losses) for 2021 increased by \$1.2 million compared to 2020 due to a defined benefit pension plan adjustment.

Total assets of \$5.2 billion as at December 31, 2021, an increase from \$4.8 billion as at December 31, 2020 reflecting higher depositor funding levels. Net loans increased \$0.1 billion to \$2.2 billion at December 31, 2021 driven primarily by the growth in the residential mortgage portfolios.

As at December 31, 2021, client AUA for the trust and custody businesses were \$10.4 billion and \$16.3 billion, respectively, while AUM were \$0.8 billion. This compares with \$19.2 billion, \$13.2 billion and \$0.8 billion, respectively, as at December 31, 2020. The decrease in AUA for trust is mainly due to the revision of fee agreements for a trust structure in Guernsey. The increase in AUA for custody is mainly due to the on-boarding of new business while AUM remains stable.

Off Balance Sheet Arrangements

Assets Under Administration and Assets Under Management

In the normal course of business, we hold AUA and AUM in a fiduciary or agency capacity for our clients. In accordance with GAAP, these assets are not our assets and are not included in our consolidated balance sheets.

Credit-Related Arrangements

We enter into standby letters of credit, letters of guarantee and contractual commitments to extend credit in the normal course of business, which are not required to be recorded on the balance sheet. Since many commitments expire unused or only partially used, these arrangements do not necessarily reflect future cash requirements. Management believes there are no material commitments to extend credit that represent risks of an unusual nature.

Standby letters of credit and letters of guarantee are issued at the request of our clients in order to secure a client's payment or performance obligations to a third party. These guarantees represent our irrevocable obligation to pay the third-party beneficiary upon presentation of the guarantee and satisfaction of the documentary requirements stipulated therein, without investigation as to the validity of the beneficiary's claim against the client. Generally, the term of the standby letters of credit does not exceed one year, while the term of the letters of guarantee does not exceed four years.

Credit risk is the principal risk associated with these instruments. The contractual amounts of these instruments represent the credit risk should the instrument be fully drawn upon and the client defaults. To control the credit risk associated with issuing letters of credit and letters of guarantee, we subject such activities to the same credit quality and monitoring controls as our lending activities. The types and amounts of collateral security we hold for these standby letters of credit and letters of guarantee are generally represented by our deposits or a charge over assets held in mutual funds. We are obligated to meet the entire financial obligation of these agreements and in certain cases are able to recover the amounts paid through recourse against the collateral security.

Risk Management

Risk Oversight and Management

Organizational Structure

The Board has overall responsibility for determining the strategy for risk management, setting the Bank's risk appetite and ensuring that risk is monitored and controlled effectively. It accomplishes its mandate through the activities of two dedicated committees:

The Risk Policy and Compliance Committee ("RPCC"): This committee of the Board assists the Board in fulfilling its responsibilities by overseeing the Group's risk profile and its performance against approved risk appetites and tolerance thresholds. Specifically, the committee considers the sufficiency of the Group's policies, procedures and limits related to the identification, measurement, monitoring and control of activities that give rise to credit, market, liquidity, interest rate, operational, regulatory, compliance, climate and reputational risks, as well as overseeing its compliance with laws, regulations and codes of conduct.

The Audit Committee: This committee reviews the overall adequacy and effectiveness of the Group's system of internal controls and the control environment, including in respect of the risk management process. It reviews recommendations arising from internal and independent audit review activities and management's response to any findings raised.

Both the RPCC and Audit Committee are supported in the execution of their respective mandates by the dedicated Audit, Compliance and Risk Policy Committees for our UK, Guernsey, Jersey, Cayman Islands and The Bahamas operations, which oversee the sufficiency of local risk management policies and procedures and the effectiveness of the system of internal controls that are in place. These committees are chaired by non-executive directors drawn from the boards of directors for each segment.

The Group executive management team is led by the Chairman & CEO and includes the members of executive management reporting directly to the Chairman & CEO. The executive management team is responsible for setting business strategy and for monitoring, evaluating and managing risks across the Group. It is supported by the following management committees:

The Group Risk and Compliance Committee ("GRCC"): This committee comprises executive and senior management team members and is chaired by the Group Chief Risk Officer. It provides a forum for the strategic assessment of risks assumed across the Group as a whole based on an integrated view of credit, market, liquidity, legal, regulatory and financial crime compliance, fiduciary, operational, cybersecurity, climate, insurance, pension, investment, capital and reputational risks, ensuring that these exposures are consistent with the risk appetites and tolerance thresholds promulgated by the Board and oversees the compliance of regulatory obligations arising under applicable laws, rules and regulations. It is responsible (i) for reviewing, evaluating and recommending the Group's Risk Appetite Framework, the results of the Capital Assessment and Risk Profile and recovery and resolution planning processes (including all associated stress testing performed) and the Group's key risk policies to the Board for approval; (ii) for reviewing and evaluating current and proposed business strategies in the context of our risk appetites; and (iii) for identifying, reviewing and advising on current and emerging risk issues and associated mitigation plans; and (iv) for reviewing the Group's compliance with external regulations and internal policies.

The Group Asset and Liability Committee ("GALCO"): This committee comprises executive and senior management team members and is chaired by the Group CFO. The committee is responsible for liquidity, interest rate and exchange rate risk management and other balance sheet issues. It also oversees key policies and the execution of the Group's investment and capital management strategies and monitors the associated risks assumed. It is supported in the execution of its mandate by the work undertaken by the dedicated Asset & Liability Committees in each of the Bank's segments.

The Group Credit Committee ("GCC"): This committee comprises executive and senior management and is chaired by the Group Chief Risk Officer. The committee is responsible for a broad range of activities relating to the monitoring, evaluation and management of credit risks assumed across the Group at both transaction and portfolio levels. It is supported in the execution of its mandate by the Financial Institutions Committee ("FIC"), a dedicated sub-committee that is responsible for the evaluation and approval of recommended inter-bank and counterparty exposures assumed in the Group's treasury and investment portfolios, and by the activities of the jurisdictional Credit Committees, which review and approve transactions within delegated authorities and recommends specific transactions outside of these limits to the GCC for approval.

The Provisions and Impairments Committee: This committee comprises executive and senior management team members and is chaired by the Group Chief Risk Officer. The committee is responsible for approving significant provisions and other impairment charges. It also oversees the overall credit risk profile of the Group in regards to non-accrual loans and assets. It is supported in the execution of its mandate by jurisdictional credit committees and the GCC, which make recommendations to this committee.

Risk Management

We manage our exposure to risk through a three "lines of defense" model.

The first "line of defense" is provided by our jurisdictional business units, which retain ultimate responsibility for the risks they assume and for bearing the cost of risks associated with these exposures.

The second "line of defense" is provided by our Risk Management and Compliance groups, which work in collaboration with our business units to identify, assess, mitigate and monitor the risks associated with our business activities and strategies. They do this by:

- making recommendations to the GRCC regarding the constitution of the Risk Appetite Framework;
- setting risk strategies that are designed to manage risk exposures assumed in the course of pursuing our business strategies and aligning them with agreed appetites;
- establishing and communicating policies, procedures and limits to control risks in alignment with these risk strategies;
- measuring, monitoring and reporting on risk levels;
- opining on specific transactions that fall outside delegated risk limits; and
- identifying and assessing emerging risks.

The functions within the Risk Management group that support our risk management activities are outlined below.

Group Market Risk: This unit provides independent oversight of the measurement, monitoring and control of liquidity and funding risks, interest rate and foreign exchange risks as well as the market risks associated with our investment portfolios. It also monitors compliance with both regulatory requirements and our internal policies and procedures relating to the management of these risks.

Group Credit Risk Management: This unit is responsible for the adjudication and oversight of credit risks associated with our retail and commercial lending activities and the management of risks associated with our investment portfolios and counterparty exposures. It also establishes the parameters and delegated limits within which credit risks may be assumed and promulgates guidelines on how exposures should be managed and monitored.

Group Operational Risk: This unit assesses the effectiveness of our procedures and internal controls in managing our exposure to various forms of operational risk, including those associated with new business activities and processes and the deployment of new technologies. It is also responsible for our incident management processes and reviews the effectiveness of our loss data collection activities.

Group Compliance: This unit provides independent analysis and assurance of our compliance with applicable laws, regulations, codes of conduct and recommended best practices, including those associated with the prevention of financial crime, including money laundering and terrorist financing. It is also responsible for assessing our potential exposure to upstream risks and for providing guidance on the preparations that should be made in advance of these changes coming into effect.

The third "line of defense" is provided by our Group Internal Audit function, which performs oversight and ongoing review, and challenges the effectiveness of the internal controls that are executed by the business and Risk Management. The Group Head of Internal Audit has a dual reporting line to both the Chair of the Audit Committee and the Chairman & CEO.

Regulatory Review Process

Our banking, trust and investment business activities in Bermuda are monitored by the BMA as the lead regulator. One of the principal objectives of the BMA is to supervise, regulate and inspect Bermuda-based financial institutions to ensure their financial stability and soundness.

In addition to conducting on-site reviews, the BMA utilizes a comprehensive quarterly statistical return system that enables off-site monitoring. The statistical system is consistent with Basel Committee Standards, and provides the BMA with a detailed breakdown of a bank's balance sheet and profit-and-loss accounts on both a consolidated and unconsolidated basis. This information enables the BMA to monitor the soundness of a bank's financial position and ensure that it meets certain capital requirements. For more information, see Item 4.B. "Business Overview - Supervision and Regulation - Bermuda - Supervision and Monitoring by the BMA".

Each of our regulated entities is separately monitored by the local regulatory authority in that jurisdiction to ensure its financial stability and soundness.

The Risk Appetite Framework

In pursuit of its strategic goals and objectives, the Bank is exposed to a broad range of risks. In support of effective governance and risk informed decision-making, the Bank has set out a risk appetite statement and framework covering its principal risk exposures and approach to managing risk. The Bank's risk appetite is set annually by the Board with the goal of aligning risk taking with statutory requirements, strategic business objectives and capital planning activities. It serves to express a clear and unambiguous methodology to foster a common risk culture across the organization, predicated on a common risk language and guide for internal stakeholders regarding acceptable and unacceptable behavior.

Our framework comprises the following elements:

- (1) **Level 1:** Principle categories of Financial, Compliance, Operational, Reputational and Strategic risk.
- (2) **Level 2:** These risks more granularly classified to sub-risk types which represent the various risks that the Group assumes across the entirety of its operations in the pursuit of its strategic initiatives:
 - Financial (Credit, Liquidity, Market)
 - Compliance (Regulatory Compliance, Financial Crime)
 - Operational (Outsourcing, Fiduciary, Investment, Tax Reporting, Financial Reporting, Correspondent Banking, People, Cyber, Technology Performance, Governance)
 - Reputational
 - Strategic
- (3) There are three options for our risk appetite (set out in the following table) for each Level 2 risk type, with each appetite designed to convey a clear strategic direction in terms of the risk/reward profile assumed, to ensure consistency in our risk conversations.

Appetite	Definition	Profile
Conservative	Areas in which the Group avoids risk, or acts to minimize or eliminate the likelihood that the risk will occur, because we have determined the likelihood and impact of potential implications are intolerable.	Our processes and controls are defensive and focus on detection and prevention.
Balanced	Areas in which the Group must constantly strike a balance between the potential upside benefits and potential downside costs of a given decision.	Exposures are only assumed when the risk can be quantified accurately and is assessed as being acceptable.
Tolerant	Areas in which the Group prefers disciplined risk-taking because we have determined the potential upside benefits outweigh the potential costs.	Exposures can be estimated reliably and structures, systems and processes are in place to manage them.

- (4) A statement of our governing principles relating to each risk category. This establishes the characteristics of the risks that the Bank is willing to assume and the management behaviors it should exhibit when doing so.

Specific performance measures (Key Risk Indicators) and tolerance thresholds have been established with respect to each risk category, combining quantitative and qualitative targets (which are designed to reflect both forward-looking as well as historical perspectives), to help provide executive management and the Board with an indication of the "direction" of our exposure relative to our declared risk appetite and an early warning of material adverse developments requiring remedial action.

The limits, targets and thresholds used to measure performance continue to be refined through the Enterprise Risk Management framework, including the expansion of Level 2 risk types, in an effort to express more granular exposure of risk relative to the stated appetite. All changes proposed pass through a formal review and approval process at both the executive management and Board levels prior to their adoption. Through this approach, the risk appetite statement sets the tone for our risk culture across the Group as a whole, influencing behaviors at all levels of the organization and reinforcing accountability for decisions taken.

Market Risks

Interest Rate Risk Management

Our primary market risk is interest rate risk, which is defined as the risk of loss of net interest income or changes in net interest margin because of changes in interest rates. Interest rate risk for the Bank is confined to the banking book as the bank does not engage in proprietary trading.

We seek to measure and manage the potential impact of interest rate risk. Interest rate risk occurs when interest earning assets and interest bearing liabilities mature or re-price at different times, on a different basis or in unequal amounts. Interest rate risk also arises when our assets, liabilities and off-balance sheet contracts each respond differently to changes in interest rates, including as a result of explicit and implicit provisions in agreements related to such assets and liabilities and in off-balance sheet contracts that alter the applicable interest rate and cash flow characteristics as interest rates change. The two primary examples of such provisions that we are exposed to are the duration and rate sensitivity associated with indeterminate-maturity deposits (e.g., interest bearing call accounts) and the rate of prepayment associated with fixed-rate lending and mortgage-backed securities. Interest rates may also affect loan demand, credit losses, mortgage origination volume and other items affecting earnings.

Our management of interest rate risk is overseen by the RPCC, which outlines reporting and measurement requirements. In particular, this infrastructure sets limits and management targets, calculated for various metrics, including our economic value sensitivity, our economic value of equity and net interest income simulations involving parallel shifts in interest rate curves, steepening and flattening yield curves, and various prepayment and deposit duration assumptions. Our risk management infrastructure also requires a periodic review of all key assumptions used, such as identifying appropriate interest rate scenarios, setting loan prepayment rates based on historical analysis, non-interest bearing and interest bearing demand deposit durations based on historical analysis, and the targeted investment term of capital.

The principal objective of our interest rate risk management is to maximize profit potential while minimizing exposure to changes in interest rates. Our actions in this regard are taken under the guidance of GALCO. The committee is actively involved in formulating the economic assumptions that we use in our financial planning and budgeting processes and establishes policies which control and monitor the sources, uses and pricing of funds. From time to time, we utilize hedging techniques to reduce interest rate risk. GALCO uses interest income simulations and economic value of equity analysis to measure inherent risk in our balance sheet at specific points in time.

Appetite for interest rate risk is documented in the Group's policies on market risk and investments. This includes the completion of stress testing on at least a quarterly basis of the impact of an immediate and sustained shift in interest rates of +/- 200 basis points on net interest income, economic value of equity and the ratio of tangible total equity to average assets. If any of the parameters established by policy are exceeded, GALCO will provide a plan to executive management to bring the exposure back within tolerance under advice to the Board. The plan does not have to bring the exposure back within limit immediately, but must adjust the exposure within Board and management approved timeframes.

We also use derivatives in the asset and liability management of positions to minimize significant unplanned fluctuations in earnings that are caused by interest rate volatility. Our derivative contracts principally involve over-the-counter transactions that are privately negotiated between the Group and the counterparty to the contract. Derivative instruments that may be used as part of our interest rate risk management strategy include interest rate swaps. Interest rate swaps generally involve the exchange of fixed and variable rate interest payments between two parties, based on a common notional principal amount and maturity date.

Interest Rate Risk

The following table sets out the assets, liabilities and shareholders' equity and off-balance sheet instruments on the date of the earlier of contractual maturity, expected maturity and repricing date. Use of these tables to derive information about our interest rate risk position is limited by the fact that customers may choose to terminate their financial instruments at a date earlier than the contractual maturity or repricing date. Examples of this include fixed-rate mortgages, which are shown at contractual maturity but which may pre-pay earlier, and certain term deposits, which are shown at contractual maturity but which may be withdrawn before their contractual maturity subject to prepayment penalties. Investments are shown based on remaining contractual maturities. The remaining contractual principal maturities for mortgage-backed securities (primarily US government agencies) do not consider prepayments. Remaining expected maturities differ from contractual maturities because borrowers may have the right to prepay obligations before the underlying mortgages mature.

December 31, 2022 (in \$ millions)	Earlier of contractual maturity or repricing date						Total	Total fair value ⁽¹⁾
	Within 3 months	3 to 6 months	6 to 12 months	1 to 5 years	After 5 years	Non-interest bearing		
Assets								
Cash and deposits with banks	2,008	—	—	—	—	93	2,101	2,101
Securities purchased under agreement to resell	60	—	—	—	—	—	60	60
Short-term investments	406	422	56	—	—	—	884	884
Investments ⁽²⁾	6	8	179	943	4,592	—	5,728	5,187
Loans ⁽³⁾	2,927	35	166	1,533	406	29	5,096	5,050
Other assets	—	—	—	—	—	437	437	437
Total assets	5,407	465	401	2,476	4,998	559	14,306	13,719
Liabilities and shareholders' equity								
Demand deposits	6,819	25	—	—	—	3,040	9,884	9,884
Term deposits ⁽⁴⁾	2,126	457	437	87	—	—	3,107	3,109
Other liabilities	—	—	—	—	—	278	278	278
Subordinated capital ⁽⁴⁾	—	75	—	97	—	—	172	178
Shareholders' equity	—	—	—	—	—	865	865	271
Total liabilities and shareholders' equity	8,945	557	437	184	—	4,183	14,306	13,719
Interest rate sensitivity gap	(3,538)	(92)	(36)	2,292	4,998	(3,624)	—	—
Cumulative interest rate sensitivity gap	(3,538)	(3,630)	(3,666)	(1,374)	3,624	—	—	—

⁽¹⁾ See Item 5.A. "Operating Results - Critical Accounting Policies and Estimates - Fair Values" and "Note 17: Fair value measurements" of the audited consolidated financial statements for further detail on the determination of fair value.

⁽²⁾ Investments include (i) HTM, which are carried at their amortized cost on the consolidated balance sheet, and (ii) equity securities and AFS investments, each of which are carried at fair value on the consolidated balance sheet. The fair value column presents all classifications at their fair value.

⁽³⁾ Loans are carried on the consolidated balance sheet as the principal amount outstanding, net of allowance for credit losses, unearned income, fair value adjustments arising from hedge accounting and net deferred loan fees.

⁽⁴⁾ Term deposits and subordinated capital are carried on the consolidated balance sheet as the principal outstanding.

Asset/Liability Management and Interest Rate Risk

The principal objective of our asset and liability management function is to evaluate the interest rate risk within the balance sheet and pursue a controlled assumption of interest rate risk while maximizing net income and preserving adequate levels of liquidity funding and capital.

As a financial institution, our primary component of market risk is interest rate volatility. Fluctuations in interest rates will ultimately impact both the level of income and expense recorded on most of our assets and liabilities, and the fair value of all interest earning assets and interest bearing liabilities, other than those which have a short term to maturity. Interest rate risk is the potential of economic losses due to future interest rate changes. These economic losses can be reflected as a loss of future net interest income and/or a loss of current fair values. The objective is to measure the effect on net interest income and to adjust the balance sheet to minimize the inherent risk while at the same time maximizing income.

We manage our exposure to interest rates primarily by structuring our balance sheet in the ordinary course of business. We do not typically enter into derivative contracts for the purpose of managing interest rate risk, but we may elect to do so in the future. Based upon the nature of our operations, we are not subject to foreign exchange or commodity price risk. Our exposure to holdings categorized as "trading positions" falls below the *de minimis* threshold established of 5% (ratio of total trading book open position compared to the sum of on- and off-balance sheet assets that are not part of the trading book).

We use an interest rate risk simulation model to test the interest rate sensitivity of net interest income and the balance sheet. Instantaneous parallel rate shift scenarios are modeled and utilized to evaluate risk and establish exposure limits for acceptable changes in net interest margin. These scenarios, known as rate shocks, simulate an instantaneous change in interest rates and use various assumptions, including, but not limited to, prepayments on securities, deposit decay rates, pricing decisions on loans and deposits, reinvestment and replacement of asset and liability cash flows. We also analyze the economic value of equity as a secondary measure of interest rate risk. This is a complementary measure to net interest income where the calculated value is the result of the fair value of assets less the fair value of liabilities. The economic value of equity is a longer-term view of interest rate risk because it measures the present value of all future cash flows. The impact of changes in interest rates on this calculation is analyzed for the risk to our future earnings and is used in conjunction with the analysis on net interest income.

The following table summarizes the simulated change in net interest income versus unchanged rates as at December 31, 2022 and December 31, 2021:

	For the year ended			
	December 31, 2022		December 31, 2021	
	Following 12 Months	Months 13 - 24	Following 12 Months	Months 13 - 24
+300 basis points	4.9 %	10.1 %	21.6 %	24.8 %
+200 basis points	3.3 %	6.7 %	14.2 %	16.6 %
+100 basis points	1.6 %	3.4 %	6.6 %	8.1 %
Flat rates	0.0 %	0.0 %	0.0 %	0.0 %
-100 basis points	(5.6)%	(7.4)%	17.8 %	15.7 %

The following table presents the change in our economic value of equity as at December 31, 2022 and December 31, 2021, assuming immediate parallel shifts in interest rates:

	For the year ended	
	December 31, 2022	December 31, 2021
+300 basis points	(17.1)%	(7.4)%
+200 basis points	(11.2)%	(5.2)%
+100 basis points	(5.4)%	(2.0)%
Flat rates	0.0 %	0.0 %
-100 basis points	3.5 %	(0.6)%

With interest rates rising rapidly in 2022, the duration of our investment portfolio expanded as prepayments slowed and our ratio of fixed versus floating rate loans increased. Deposit costs are also getting more sensitive to market rates, most notably in our Channel Islands market, which explains the change in the IRR profile i.e. showing less NII sensitivity to upside shocks and a higher (negative) impact of those shocks on EVE.

Many assumptions are used to calculate the impact of interest rate fluctuations. Actual results may be significantly different than our projections due to several factors, including the timing and frequency of rate changes, market conditions and the shape of the yield curve. The computations of interest rate risk shown above do not include the full suite of actions that our management may undertake to manage the risks in response to anticipated changes in interest rates, and actual results may also differ materially.

Foreign Exchange Risk

The Group holds various non-USD denominated assets and liabilities and maintains investments in subsidiaries whose domestic currency is either not USD or whose domestic currency is not pegged to USD. Assets and liabilities denominated in currencies other than USD are translated to USD at the rates of exchange prevailing at the balance sheet date. The resulting gains or losses are included in foreign exchange revenue in the consolidated statements of operations. Assets and liabilities of subsidiaries outside of Bermuda are translated at the rate of exchange prevailing on the balance sheet date while associated revenues and expenses are translated to USD at the average rate of exchange prevailing through the accounting period. Unrealized translation gains or losses on investments in foreign currency based subsidiaries are recorded as a separate component of shareholders' equity within accumulated other comprehensive loss. Such gains or losses are recorded in the consolidated statements of operations only when realized. Our foreign currency subsidiaries may give rise to significant foreign currency translation movements against the USD. We also provide foreign exchange services to our clients, principally in connection with our banking and wealth management businesses, and effect other transactions in non-USD currencies. Foreign currency volatility and fluctuations in exchange rates may impact the value of non-USD denominated assets and liabilities and raise the potential for losses resulting from foreign currency trading positions where aggregate obligations to purchase and sell a currency other than USD do not offset one another, or offset each other in different time periods. If the policies and procedures we have in place to assess and mitigate potential impacts of foreign exchange volatility are not followed, or are not effective to mitigate such risks, our results and earnings may be negatively affected. The Group maintains a clearly articulated foreign exchange risk exposure tolerance framework which limits exposures to select major currencies.

Liquidity Risk

The objectives of liquidity risk management are to ensure that the Group can meet its cash flow requirements and capitalize on business opportunities on a timely and cost-effective basis. Liquidity is defined as the ability to hold and/or generate cash adequate to meet our needs for day-to-day operations and material long and short-term commitments. Liquidity risk is the risk of potential loss if the Group were unable to meet its funding requirements at a reasonable cost.

We monitor and manage our liquidity by banking location and on a Group-wide basis. The treasury functions in the Group's banking operations, located in Bermuda, the Cayman Islands, Guernsey, and Jersey, manage day-to-day liquidity. The Group market risk function has the responsibility for measuring and reporting to senior management on liquidity risk positions. We manage our liquidity based on demand, commitments, specific events and uncertainties to meet current and future financial obligations of a short-term nature. Our objective in managing liquidity is to respond to the needs of depositors and borrowers as well as to earnings enhancement opportunities in a changing marketplace. Management is responsible for establishing and monitoring liquidity targets as well as strategies to meet these targets. The Group adopts a conservative liquidity risk appetite with internal quantitative liquidity risk tolerances more stringent than regulatory requirements. Specifically, the Group manages liquidity against internal limits established by the market risk management policy and its related liquidity risk standard and quarterly stress testing methodology.

We maintained a balance sheet with loans representing 35.6% of total assets as at December 31, 2022. Further, at that date there were significant sources of liquidity within our balance sheet in the form of cash and cash equivalents, short-term investments, securities purchased under agreements to resell and investments amounting to \$8.8 billion, or 61.3%, of total assets.

An important element of our liquidity management is our liquidity contingency plan which can be employed in the event of a liquidity crisis. The objective of the liquidity contingency plan is to ensure that we maintain our liquidity during periods of stress. This plan takes into consideration a variety of scenarios that could challenge our liquidity. These scenarios include specific and systemic events that can impact our on- and off-balance sheet sources and uses of liquidity. This plan is reviewed and updated at least annually.

Credit Risk

Credit risk is defined as the risk that unexpected losses arise as a result of the Group's borrowers or market counterparties failing to meet their obligations to repay. Credit risk is managed through the jurisdictional CRM departments. CRM provides a system of checks and balances for our diverse credit-related activities by establishing and monitoring all credit-related policies and practices throughout the Group and assuring their uniform application. These activities are designed to diversify credit exposure on an industry and client basis, thus lessening overall credit risk. These credit management activities also apply to our use of derivative financial instruments, including foreign exchange contracts and interest rate risk management instruments, which are used primarily to facilitate client transactions.

Individual credit authority for commercial and other loans is limited to specified amounts and maturities. Credit decisions involving commitment exposure in excess of the specified individual limits are submitted to CRM and then to the GCC, which provides a forum for ongoing executive review of loan activity, establishing our credit guidelines and policies and approving selected credit transactions in accordance with our business objectives. The committee reviews large credit exposures, establishes and reviews credit strategy and policy and approves selected credit transactions. The FIC manages counterparty risk in respect of third party bank counterparties which do not have commercial credit relationships within the Group and also approves country exposure limits.

As part of our ongoing credit granting process, internal ratings are assigned to commercial clients before credit is extended, based on an assessment of creditworthiness. At least annually, a review of all significant credit exposures is undertaken to identify, at an early stage, clients who might be facing financial difficulties. Internal borrower risk ratings are also reviewed during this process, allowing identification of adverse individual borrower and sector trends, and accurate application of internal borrower risk ratings which incorporates but is not limited to an assessment of climate risk impacting borrower risk ratings.

An integral part of the CRM function is to formally review past due and potential problem loans to determine which credits, if any, need to be placed on non-accrual status or charged off. The allowance for loan losses is reviewed quarterly to determine the amount necessary to maintain an adequate provision for current expected credit losses.

Another way credit risk is managed is by requiring collateral. Management's assessment of the borrower's creditworthiness determines whether collateral is obtained. The amount and type of collateral held varies but may include deposits held in financial institutions, mutual funds, US Treasury securities, other marketable securities, income-producing commercial properties, accounts receivable, residential real estate, property, plant and equipment, and inventory. Values of variable collateral are monitored on a regular basis to ensure that they are maintained at an appropriate level, which includes an assessment of the climate risk impact on the value of the collateral.

Credit Risk — Retail and Private Banking

Retail and private lending activity is split between residential mortgages, personal loans, credit cards and authorized overdrafts. Retail credit risks are managed in accordance with limits and processes set out in the credit risk policies and guidelines approved by GCC and GRCC (and approved by the Board). The policies set out where specialist underwriting may be needed.

For residential mortgages, a combination of lending policy criteria, lending guidelines and underwriting are used to make a decision on applications for credit. The primary factors considered are affordability, residential status, residential history, credit history, employment history, nature of income and LTV of the residential property. In addition, confirmation of a borrower's identity is obtained and an assessment of the value of the collateral is carried out prior to granting a credit facility. When considering applications, the primary focus is placed on the willingness and ability to repay.

LTV ratios are derived based on third-party valuations as part of the original underwriting or when increased borrowing has been requested. Updated valuations are not otherwise obtained unless the loan reaches non-accrual status. Non-accrual loans which are collateral-dependent on real estate must be supported by a third-party valuation no older than 12 months. Costs of sale for commercial properties are calculated based on individual circumstances, whereas the haircuts for residential real estate are prescribed in lending guidelines by geographic location and are never less than 15% of the valuation amount.

As valuations are conducted throughout the year, the rolling average age of the valuations are closer to 6 months than 12 months. To further ensure that valuations within the 12-month revaluation period remain appropriate measures for input into the CECL model, we: (1) compare renewal valuations to the prior valuation to track market movement; (2) back-test all sales to compare net carrying value versus any additional gain/loss at the time of sale; (3) segregate the tests described in (1) and (2) by geographic area and, where required, amend provision factors accordingly; and (4) perform a review of new valuations to ascertain such valuations' reasonableness and determine if any change in value may impact similar properties or locations where valuations are more stale-dated and require an adjustment to the CECL model.

The Bank performs an annual assessment of group residential LTV ranges as part of its stress-testing exercise for regulatory and capital-adequacy purposes. Real estate indices are not available in the Bank's primary markets and LTV values are based on standard reductions in value over time, based on observed market activity.

Generally, maximum LTV for new residential and commercial loans is as follows:

	Bermuda	Cayman Islands	UK—London	Channel Islands
Residential				
Owner-occupied freehold	70 %	85 %	65 %	80 %
Owner-occupied leasehold condominium	70 %	85 %	65 %	80 %
Investment (not owner-occupied)	65 %	75 %	65 %	80 %
Raw land	50 %	80 %	N/A	N/A
Commercial Real Estate	65 %	65 %	N/A	65 %

For other retail lending products, similar lending policy criteria are used, and each of these products has its own policy and underwriting guidelines to enable decisions on applications for credit and to manage accounts. The factors used are attuned to the lending product in question, although affordability and credit history are considered in all

cases. Ongoing monitoring of all retail and private banking credit is undertaken by the business unit concerned as well as by CRM. In addition, the GCC reviews reports on a weekly basis. In the event that particular exposures show adverse features such as arrears, the Bank's specialist recovery teams generally work with borrowers to resolve the situation.

Unlike the United States where the FCRA is designed to help ensure that credit bureaus furnish correct and complete information when evaluating loan applications, the markets in which we operate do not have systemic credit bureau reports. Therefore, we manually review each loan and we use a formally governed tiered credit approval process that is administered through and governed by our Risk Management framework.

Credit Risk — Commercial Banking

Commercial credit risks are managed in accordance with limits and asset quality measures set out in the credit risk policies and guidelines approved by the GCC (and ratified by the Board).

In respect of Commercial Banking, there is a level of delegated sanctioning authority to underwrite certain credit risks based upon an evaluation of the borrower's experience, track record, financial strength, ability to repay, transaction structure and security characteristics. Lending decisions for large or high risk exposures are based upon a thorough credit risk analysis and the assignment of an internal borrower risk rating, and are subject to further approval by the assigned officers in CRM or the GCC.

Consideration is also given to risk mitigation measures which will provide the Group with protection, such as third-party guarantees, supporting collateral and security, legal documentation and financial covenants. Commercial portfolio asset quality monitoring is based upon a number of measures, including the monitoring of financial covenants, cash flows, pricing movements and variable collateral. In the event that particular exposures begin to show adverse features such as payment arrears, covenant breaches or business trading losses, a full risk reassessment is undertaken. Where appropriate, a specialist recovery team will work with the borrower to resolve the situation. If this proves unsuccessful, the case will be subject to intensive monitoring and management procedures designed to maximize debt recovery.

Credit Risk — Treasury

Treasury credit risks are managed in accordance with limits, asset quality measures and criteria set out within the policy approved by the GCC and ratified by the Board. The policy also sets out powers which require higher levels of authorization according to the size of the transaction or the nature of the associated risk. The FIC identifies, assesses, prioritizes and manages our risks associated with counterparty exposure to other financial institutions, as well as country-specific exposures.

Exposures to financial institutions arise within the Group's investment portfolio and treasury operations. The Group has treasury operations in all of its banking locations. Treasury exposures primarily take the form of deposits with banks and foreign exchange positions. Exposures to financial institutions in the investment portfolio can take the form of bonds, floating rate notes and/or certificates of deposit.

Diversification and avoidance of concentration is emphasized. The Group establishes limits for countries and each financial institution where there is an expected exposure. Ongoing asset quality monitoring is undertaken by Treasury and CRM and reports are sent to the FIC, GCC and GRCC on a monthly basis. Exception reporting takes place against a range of asset quality triggers. Treasury uses a number of risk mitigation techniques including netting and collateralization agreements. Other methods (such as margining and derivatives) are used periodically to mitigate the risk associated with particular transactions or groups of transactions.

For its exposure to Treasury credit risk, the Group uses external credit assessment institutions as permitted under Basel III for sovereign, financial institutions, asset-backed securities, covered bonds and corporate risks. With regard to financial institutions and corporates, the Group's preference for a long-term rating is the senior unsecured rating. However, counterparty ratings and/or short-term deposit or commercial paper ratings are used if this is unavailable. For asset-backed securities, the issue or tranche rating is used.

Exposures

The following tables analyze the Group's regulatory credit risk exposures as at December 31, 2022 and December 31, 2021. Exposures are allocated to specific standardized exposure portfolios determined by the BMA's Revised Framework for Regulatory Capital Assessment and it is these portfolios that determine the risk weights used. These exposures include both on- and off-balance sheet exposures, with the latter shown separately after credit conversion factors have been applied.

Analysis of exposures class (in millions of \$)	Average Exposure 2022	Position as at December 31, 2022	Average Exposure 2021	Position as at December 31, 2021
Cash	69.4	73.9	70.2	66.5
Claims on Sovereigns	2,758.6	2,933.5	2,539.2	3,091.5
Claims on Public Sector Entities	42.8	6.4	88.2	68.2
Claims on Corporates	595.5	477.0	666.0	559.0
Claims on Banks and Securities Firms	1,458.6	1,346.9	1,804.6	1,527.6
Securitized	4,896.0	4,646.7	5,194.9	5,134.3
Retail Loans	202.8	211.8	226.6	222.3
Residential Mortgages	3,499.3	3,544.8	3,444.3	3,582.8
Commercial Mortgages	644.2	619.5	703.5	675.7
Past Due Loans	64.6	68.6	72.4	63.3
Other Balance Sheet Exposures	260.1	282.6	268.5	246.6
Non-Market Related Off-Balance Sheet Credit Exposures	535.5	482.8	628.7	608.7
Market Related Off-Balance Sheet Credit Exposures	60.4	51.1	58.0	54.8
Total	15,087.9	14,745.6	15,765.2	15,901.3

Geographic segment distribution of exposures class
as at December 31, 2022
(in millions of \$)

	Bermuda	Cayman Islands	Channel Islands & UK	Other	Total
Cash	38.8	35.1	—	—	73.9
Claims on Sovereigns	912.4	722.2	1,298.9	—	2,933.5
Claims on Public Sector Entities	6.4	—	—	—	6.4
Claims on Corporates	313.0	42.1	121.9	—	477.0
Claims on Banks and Securities Firms	503.9	417.2	415.2	10.6	1,346.9
Securitized	1,811.1	2,165.3	670.3	—	4,646.7
Retail Loans	100.3	72.5	39.0	—	211.8
Residential Mortgages	997.5	815.0	1,732.3	—	3,544.8
Commercial Mortgages	457.7	79.9	81.9	—	619.5
Past Due Loans	48.1	0.7	19.8	—	68.6
Other Balance Sheet Exposures	161.1	55.7	53.3	12.5	282.6
Non-Market Related Off-Balance Sheet Credit exposures	170.7	180.4	131.7	—	482.8
Market Related Off-Balance Sheet Credit Exposures	24.5	1.5	25.1	—	51.1
Total	5,545.5	4,587.6	4,589.4	23.1	14,745.6

Residual maturity breakdown of exposures class
as at December 31, 2022
(in millions of \$)

	Up to 12 months	1 - 5 years	More than 5 years	No specific maturity	Total
Cash	73.9	—	—	—	73.9
Claims on Sovereigns	1,736.6	763.7	433.2	—	2,933.5
Claims on Public Sector Entities	—	—	6.4	—	6.4
Claims on Corporates	215.9	178.9	82.2	—	477.0
Claims on Banks and Securities Firms	1,346.9	—	—	—	1,346.9
Securitized	—	18.0	4,628.7	—	4,646.7
Retail Loans	157.5	40.3	14.0	—	211.8
Residential Mortgages	410.7	1,156.9	1,977.2	—	3,544.8
Commercial Mortgages	28.5	107.7	483.3	—	619.5
Past Due Loans	36.4	5.9	26.3	—	68.6
Other Balance Sheet Exposures	—	—	—	282.6	282.6
Non-Market Related Off-Balance Sheet Credit exposures	482.8	—	—	—	482.8
Market Related Off-Balance Sheet Credit Exposures	51.1	—	—	—	51.1
	4,540.3	2,271.4	7,651.3	282.6	14,745.6

Impairment Provisions

Credit Risk Concentrations

Concentration risk is defined as: any single exposure or group of exposures with the potential to produce losses large enough (relative to the Group's capital, total assets or overall risk level) to threaten the Group's health or ability to maintain core operations. The management of concentration risk is addressed in the first instance by the Group's large exposure policy and related credit guidelines, which require that credit facilities to entities that are affiliated through common ownership or management are aggregated for adjudication and reporting purposes. The policy also defines what constitutes a large exposure and the related reporting requirements. The CRM function also undertakes monitoring and assessment of our exposure to concentration risk, reporting the results of these analyses to the GCC, GRCC and RPCC.

The factors taken into consideration when assessing concentration risk are as follows:

- single or linked counterparty;
- industry or economic sector (e.g., hospitality, property development, commercial office building investment);
- geographic region;
- product type;
- collateral type; and
- maturity date (whether of the facility or of interest rate fixes).

Counterparty Concentrations

Counterparty concentrations is the risk associated with assuming a high level of exposure to a single counterparty, the failure of which could have an adverse impact on the Group.

Large exposures are reviewed quarterly by the GRCC and RPCC for the loan portfolio and the treasury/investment portfolios. Group Market Risk and Treasury work closely together on daily treasury positions and exceptions.

All large exposures and concentrations in the portfolio are reviewed and agreed by the FIC on a quarterly basis and are reported to the Board and the BMA as a part of this process. The review of large exposures considers:

- facility total;
- any link with other facilities;
- total linked facility being within guidelines;
- borrower risk rating;
- security value on the facility; and
- loan-to-value percentage against minimum security covenants.

Industry Concentration

Industry concentration encompasses the scenario that a risk factor inherent within an industry is tied to an entire portfolio of accounts or investments; e.g., a portfolio made up of a large number of small individual loans where all the counterparties are hotel operators. We believe that due to the nature of the Group's client base our exposure to the property, insurance and fund sectors could be classified as industry concentration, although we believe geographic and product concentration are the more appropriate risks to measure.

Geographic Concentration

Geographic concentration of the book is monitored as follows: Reports are generated which provide details of all the property loan exposure of the Group. Through this, loans are subdivided into regional exposure. From this, the percentage breakdown per region of the Group's property exposure is analyzed and reported to the GRCC and RPCC. Assessment of the exposure allows the committees to decide whether the Group should decline further lending in any area in which it is becoming over-weighted.

Product Concentration

Product concentration is defined in the context of credit risk, as an over-weighting in the portfolio to a given product type, making the Group vulnerable to the impact of a variety of external factors that could either reduce demand for the product itself or lead to an increase in the level of default rates experienced. We operate as a full service bank in Bermuda and the Cayman Islands and aim to satisfy the requirements of our customers in these communities through the range of products and services we offer. Accordingly, there is no dependence or concentration on a single product in these markets outside of the residential mortgage portfolios, which comprised 69.7% of the Group's loan book as at December 31, 2022 (compared to 68.8% as at December 31, 2021); in Bermuda, residential mortgage lending made up 55.0% of the Bermuda loan book as at December 31, 2022 (compared to 53.1% as at December 31, 2021), and loans for many purposes (education, business support, family requirements) were made in the form of residential mortgages. Product category analysis confirms that the total lending portfolio is concentrated in the property market; this has been addressed by performing stress testing.

Collateral Concentration

Collateral concentration considers whether the Group's loan book is secured by a limited number of collateral types. An example of this would be when a large value of loans to a diversified group of borrowers is all secured by shares in the same company or by the shares of various companies within the same industry sector. Any decline in the value of these shares or in the performance of the sector as a whole could have an adverse impact on the Group's security position across all affected borrowers. The most relevant example of collateral concentration is the Group's exposure to real estate property values. Ignoring cash-backed facilities, the largest collateral concentrations within the portfolio are to residential and commercial property. The greatest risk with collateral concentration is that the value of the security could be severely reduced. To simulate this, the Group's stress testing process incorporates a scenario in which all real estate collateral is devalued by factors as high as 30%.

Credit Risk Mitigation

The Group uses a wide range of techniques to reduce the credit risk of its lending. The most basic of these is performing an assessment of the ability of a borrower to service the proposed level of borrowing without distress. However, the risk can be further mitigated by obtaining security for the funds advanced.

Residential Mortgages

Residential property is the Group's main source of collateral and means of mitigating credit risk inherent in the residential mortgage portfolio. All mortgage lending activities are supported by underlying assumptions and estimated values received by independent third parties. All residential property must be insured to cover property risks through a third party.

Commercial

Commercial property is one of the Group's primary sources of collateral and means of mitigating credit risk inherent in its commercial portfolios. Collateral for the majority of commercial loans comprises first legal charges over freehold or long leasehold property but the following may also be taken as security: life insurance policies; credit balances assignments; shares; guarantees; equitable charges; debentures; chattel mortgages and charges over residential property.

For property-based lending, supporting information such as professional valuations are an important tool to help determine the suitability of the property offered as security and, in the case of investment lending, generating the cash to cover interest and principal payments. All standard documentation is subject to in-house legal review and sign-off in order to ensure that the Group's legal documentation is robust and enforceable. Documentation for large advances may be specifically prepared by independent solicitors. Insurance requirements are always fully considered as part of the application process and the Group ensures that appropriate insurance is taken out to protect the property against an insurable event.

Treasury

Collateral held as security for treasury assets, including investments, is determined by the nature of the instrument. Loans, debt securities, treasury and other eligible bills are generally unsecured with the exception of asset-backed securities and similar instruments, which are secured by pools of financial assets. The ISDA master agreement is the Group's preferred method of documenting derivative activity. It is common in such cases for a Credit Support Annex to be executed in conjunction with the ISDA master agreement in order to mitigate credit risk on the derivatives portfolio. Valuations are performed, agreed with the relevant counterparties, and collateral is exchanged to bring the credit exposure within agreed tolerances. The EAD value to the counterparty is measured under the standardised approach for measuring counterparty credit risk exposures method and is derived by adding the gross positive fair value of the contract (replacement cost) to the contract's potential future credit exposure, which is derived by applying a multiple base on the contracts residual maturity to the notional value of the contract, and applying an alpha of 1.4 to the sum of these components.

The following table shows the exposures to counterparty credit risk for derivative contracts as at December 31, 2022 and December 31, 2021:

(in millions of \$)	Gross Positive Fair Value of Contracts as at December 31, 2022	Potential Future Credit Exposure as at December 31, 2022	Alpha as at December 31, 2022	EAD Value as at December 31, 2022	Gross Positive Fair Value of Contracts as at December 31, 2021	Potential Future Credit Exposure as at December 31, 2021	Alpha as at December 31, 2021	EAD Value as at December 31, 2021
Spot and forward foreign exchange and currency swap contracts	13.2	23.3	1.4	51.1	18.0	21.2	1.4	54.9

Securitized assets

The Bank has not, to date, securitized assets that it has originated. The Bank's total exposure to purchased securitization positions as at December 31, 2022 was \$4.6 billion by market value (compared to \$5.1 billion as at December 31, 2021), with US government and federal agencies accounting for the majority of this exposure.

The following table provides an analysis of the Bank's investments in securitization positions by exposure type as at December 31, 2022 and December 31, 2021:

Underlying asset type (in millions of \$)	Exposure Value as at December 31, 2022	Exposure Value as at December 31, 2021
US government and federal agencies	4,611.9	5,083.2
Mortgage backed securities — Retail	19.0	27.3
Asset-backed securities — Student loans	5.6	13.2
Total	4,636.5	5,123.7

Operational Risk

In providing our services, we are exposed to operational risk. This is the risk of loss from inadequate or failed internal processes and systems, actions or inactions of people, or from external events. Operational risk is inherent in our activities and can manifest itself in various ways including fraudulent acts, business interruptions, inappropriate behavior of employees, unintentional failure to comply with applicable laws and regulations, cybersecurity incidents and privacy breaches or failure of vendors to perform in accordance with their arrangements. These events could result in financial losses, litigation and regulatory fines, as well as other damage to us. Our risk management goal is to keep operational risk at appropriate levels consistent with our risk appetite, financial strength, the characteristics of our businesses, the markets in which we operate and the competitive and regulatory environment to which we are subject.

As we continue to expand our use of technology, we are exposed to various forms of cyber-attacks. We devote significant resources to maintain and regularly upgrade our systems and networks and review the ever changing threat landscape in order to mitigate our exposure to cyber risks. In addition to the policy reviews, we continue to look to implement technology solutions that enhance preventive and detection capabilities and our ability to recover quickly should a successful cyber-attack occur. We assess our third-party vendor controls and have a developed business continuity plan that addresses potential cyber risks. We also maintain insurance coverage that may, subject to policy terms and conditions, cover certain aspects of cyber risks. However, such insurance may be insufficient to cover all losses.

Operational risk is mitigated through internal controls embedded in our business activities and our risk management practices, which are designed to continuously reassess the effectiveness of these controls in order to keep the risk we assume at levels appropriate to our risk appetite as approved by the Board. Data on operational losses and any significant control failures incurred are captured through an incident reporting process. These events are reported to both the GRCC and RPCC, which assess the sufficiency of the corrective actions taken by management to prevent recurrence. Both committees also receive regular reporting on actual performance against established risk tolerance metrics.

Russian Invasion of Ukraine

Butterfield adopts a conservative risk posture and maintains robust preventative and detective controls that have meant that the identified exposure to targets of sanctions has, to date, been minimal. Our business generally contains very few clients with Russian, Belarusian or Ukrainian ties and we therefore do not expect the current geopolitical conflict and related sanctions to present significant reputational or financial exposure for the Bank. The Bank's Group Compliance function continues to monitor for new sanctions, review our client base and ensure our control environment remains appropriately calibrated to manage our reputational and compliance risk as events continue to unfold.

Interest Rate Benchmark Reform

On March 5, 2021, the FCA and ICE Benchmark Administration, the authorized and regulated administrator of LIBOR, announced that all the GBP, CHF, JPY and EUR LIBOR settings and the one-week and two-month USD LIBOR settings will cease after December 31, 2021, and the remaining USD LIBOR settings will cease after June 30, 2023. It was subsequently announced that one-, three- and six-month GBP and JPY LIBOR settings would continue for the duration of 2022, albeit on a synthetic basis.

These reforms have the potential to impact various risk areas for the Bank, including but not limited to: operational risk (potential adverse impacts to the business, customers and technology); market risk (potential adverse impacts to the business and customers if markets are disrupted); and accounting risk (potential adverse impacts to the statement of operations if issues with hedge accounting/effectiveness arise). The Bank, however, does not expect any material change to its risk management frameworks and controls as a result of the reforms.

The Bank has established a LIBOR transition working group, consisting of senior members of management, with significant representation from the Legal and Risk departments. The working group reports directly to the GRCC which feeds into the RPCC of the Board. The working group has set up a detailed project plan which includes: transition planning; financial exposure measurement and risk assessment; operational preparedness and controls; legal contract preparedness/modification; communication; and training and oversight.

As at December 31, 2022, the Bank had 72 loans totaling \$290.8 million linked to LIBOR (December 31, 2021: 121 loans totaling \$563.5 million). This excludes one-week and two-month USD LIBOR which have already transitioned. The Bank is engaging with impacted customers to ensure adequate fallback provisions are included in contracts, where not already provided for.

There were no derivative positions maturing after the relevant transition dates.

Capital Adequacy Management

Effective January 1, 2015, the BMA adopted capital and liquidity requirements consistent with Basel III. These requirements are contained within the BMA's "Basel III for Bermuda Banks November 2017 Rule Update" and can be found on its website.

The Group manages its capital both on a total Group basis and, where appropriate, on a legal entity basis. The finance department has the responsibility for measuring, monitoring and reporting capital levels within guidelines and limits established by the RPCC. The management of capital will also involve regional management to ensure compliance with local regulation. In establishing the guidelines and limits for capital, a variety of factors are taken into consideration, including the overall risk of the business in stressed scenarios, regulatory requirements, capital levels relative to our peers, and the impact on our credit ratings.

Capital Assessment and Risk Profiling

Under the requirements of the Basel II Accord as implemented by the BMA, the Group undertakes a CARP process, which is an internal assessment of all material risks to determine our capital needs. This internal assessment takes account of the minimum capital requirement and other risks not covered by the minimum capital requirement (Pillar II). Where capital is deemed as not being able to mitigate a particular risk, alternative management actions are identified and described within the CARP. The CARP is presented to the RPCC before being presented to the Board for challenge and approval and then submission to the BMA. The CARP process is performed annually or more frequently should the need arise.

A SREP is then undertaken biannually by the BMA, which is designed to assess the Group's risk profile as documented in the CARP. This assessment is used to determine and set the Individual Capital Guidance which is the minimum level of capital the Group will be required to hold until the next SREP review is conducted.

B. Liquidity and Capital Resources

Liquidity

We define liquidity as our ability to maintain cash flow that is adequate to fund operations and meet present and future financial obligations through either the sale or maturity of existing assets or by obtaining additional funding through liability management.

Sources and Uses of Cash

Our primary sources of cash are (i) cash obtained from deposits, (ii) long-term debt, and (iii) cash from operations. Our primary uses are (i) the payment of our operating expenses, (ii) payment of dividends on our common shares, (iii) repayment of certain maturing liabilities, (iv) repurchase of our common shares, and (v) extraordinary requirements for cash, such as acquisitions. We had \$2.1 billion of cash and cash equivalents as at December 31, 2022 and \$2.2 billion as at December 31, 2021, as well as \$6.7 billion and \$7.5 billion, respectively, of liquid securities, the balance of which could be sold to meet liquidity requirements. In our opinion, the Bank's working capital is sufficient for the Bank's present requirements.

Liquidity Risk

Our liquidity risk is managed through a comprehensive framework of policies and limits overseen by GALCO. We consider the effective and prudent management of liquidity to be fundamental to our health and strength. Our objective is to manage our cash flow and liquidity reserves so that they are adequate to fund our obligations and other commitments on a timely basis and at a reasonable cost.

We continuously monitor and make adjustments to our liquidity position by adjusting the balance between sources and uses of funds as we deem appropriate. Our primary measures of liquidity include monthly cash flow analysis under ordinary business activities and conditions and under situations simulating a severe run on the Bank. The Bank strives to use a balanced liquidity risk appetite with internal quantitative liquidity risk tolerances more stringent than regulatory requirements. Specifically the Bank manages liquidity against internal limits established by the market risk management policy and its related liquidity risk standard and quarterly stress testing methodology. The results of these measures and analysis are incorporated into our liquidity contingency plan, which provides the basis for the identification of our liquidity needs. For more information, see Item 11 "Operating Results - Liquidity Risk".

Capital Resources

We have financed our operations, growth and cash needs primarily through income from operations and issuances of debt and equity securities. We believe that our cash on hand and cash flows from operations will be sufficient to repay our outstanding debt as it matures. In the future, we may need to incur additional debt or issue additional equity securities, which we may be unable to do or which may be on less favorable terms.

We manage our capital both on a consolidated basis and, where appropriate, on a legal entity basis. The group finance team has the responsibility for measuring, monitoring and reporting capital levels within guidelines and limits established by the RPCC. The management of capital will also involve jurisdictional management to ensure compliance with local regulations. In establishing the guidelines and limits for capital, a variety of factors are taken into consideration, including the overall risk of the business in stressed scenarios, regulatory requirements, capital levels relative to our peers, and the impact on our credit ratings.

Effective January 1, 2015, the BMA implemented the capital reforms proposed by the BCBS and referred to as the Basel III regulatory framework. Basel III aims to raise the quality, consistency and transparency of the capital base, limit the build-up of excess leverage and increase capital requirements for the banking sector. We are now subject to the following requirements:

- CET1 ratio of at least 7.0% of RWA, inclusive of a minimum CET1 ratio of 4.5% and the new capital conservation buffer of 2.5%, but excluding the Domestic Systematically Important Bank ("D-SIB") surcharge described below;
- Tier 1 capital of at least 8.5% of RWA, inclusive of a minimum Tier 1 ratio of 6% and the new capital conservation buffer of 2.5%, but excluding the D-SIB surcharge described below;
- Total capital of at least 10.5% of RWA, inclusive of a minimum total capital ratio of 8% and the new capital conservation buffer of 2.5%, but excluding the D-SIB surcharge described below;

- We are considered to be a D-SIB and are subject to a 3% surcharge composed of CET1-eligible capital implemented by the BMA effective September 30, 2015. This is based upon our assessment of the extent to which we (individually and collectively with the other Bermuda banks) pose a degree of material systemic risk to the economy of Bermuda due to our role in deposit taking, corporate lending, payment systems and other core economic functions;
- Counter-cyclical buffer of up to 2.5% composed of CET1-eligible capital may be implemented by the BMA when macroeconomic indicators provide an assessment of excessive credit or other pressures building in the banking sector, potentially increasing the CET1, Tier 1 and total capital ratios by up to 2.5%. No counter-cyclical buffer has been implemented to date;
- Leverage ratio must be at 5.0% or higher;
- LCR with a minimum requirement of 100%; and
- NSFR with a minimum requirement of 100%.

The minimum capital ratio requirements set forth above do not reflect additional Pillar II add-on requirements that the BMA may impose upon us as a prudential measure from time to time. Our capital requirements remain under continuous review by the BMA pursuant to its prudential supervision and we cannot guarantee that the BMA will not seek higher total capital ratio requirements at any time.

In December 2017, the BCBS published standards that it described as the finalization of the Basel III post-crisis regulatory reforms (the standards are commonly referred to as "Basel IV"). Among other things, these standards revise the BCBS's standardized approach for credit risk (including by recalibrating risk weights and introducing new segmentations for exposures) and provides a new standardized approach for operational risk capital. Under the BCBS framework, these standards will generally be effective on January 1, 2023², with an aggregate output floor phasing in through January 1, 2028. The BMA issued consultation papers in 2022 which set out the Authority's proposed adoption of the BCBS's revised standardized approach for operational and credit risk with implementation dates of January 1, 2023 and January 1, 2024, respectively.

The following table sets forth our capital adequacy as at December 31, 2022 and 2021 in accordance with the Basel III framework:

(in millions of \$)	As at December 31	
	2022	2021
Capital		
Common Equity Tier 1	983.3	896.3
Tier 1 capital	983.3	896.3
Tier 2 capital	183.6	184.0
Total capital	1,167.0	1,080.3
Risk Weighted Assets		
Cash and cash equivalents and investments	1,023.4	1,141.4
Loans	2,507.3	2,606.0
Other assets	288.6	255.3
Off-balance sheet items	173.5	230.9
Operational risk charge	850.5	867.9
Total risk-weighted assets	4,843.4	5,101.5
Capital Ratios (%)		
Common Equity Tier 1	20.3 %	17.6 %
Tier 1 total	20.3 %	17.6 %
Total capital	24.1 %	21.2 %
Leverage ratio	6.7 %	5.6 %

Overall, capital ratios have increased, driven primarily by a decrease in RWAs and earnings accretion and partially offset by dividend payments and share repurchases. The decrease in RWA is driven primarily by decreased depositor funding. As at December 31, 2022, we were in compliance with the minimum LCR of 100% as well as the minimum NSFR of 100%.

Share Repurchase Program

The Bank repurchases its common shares through share repurchase programs from time to time as a means to improve shareholder liquidity and facilitate growth in share value. In accordance with applicable laws, regulations and listing standards, each program was approved by the Board and repurchases of shares pursuant to each program are subject to the approval of the BMA. In addition, the BSX is advised monthly of shares purchased pursuant to each program.

On December 6, 2018, following the completion of the initial 2018 share repurchase program, the Board approved the 2019 share repurchase program, authorizing the purchase of up to 2.5 million common shares through February 29, 2020.

On December 2, 2019, the Board approved, with effect from the completion of the previous program on December 20, 2019 through February 28, 2021, a common share repurchase program, authorizing the purchase of up to 3.5 million common shares or \$125 million.

On February 10, 2021, the Board approved a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through February 2022.

² In March 2020, in response to the pandemic, the BCBS deferred the implementation timeline from January 1, 2022 to January 1, 2023 and the output floor phasing in from January 1, 2027 to January 1, 2028.

On February 14, 2022, the Board approved, with effect from the completion of the previous program, a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through February 28, 2023.

On February 13, 2023, the Board approved, with effect from the completion of the previous program, a new common share repurchase program, authorizing the purchase of up to 3.0 million common shares through February 29, 2024. The timing and amount of repurchase transactions under the new program will be based on market conditions, share price, legal requirements and other factors. No assurances can be given as to the amount of common shares that may actually be repurchased.

Total common share repurchases for the years ending December 31, 2022, 2021 and 2020 are as follows:

	For the year ending December 31		
	2022	2021	2020
Acquired number of shares (to the nearest share)	102,000	534,828	3,452,000
Average cost per common share (in \$)	38.21	36.93	25.10
Total cost (in \$)	3,897,268	19,753,336	86,639,889

From time to time, our associates, insiders and insiders' associates as defined by the BSX regulations may sell shares which may result in such shares being repurchased pursuant to each program, provided no more than any such person's pro-rata share of the listed securities is repurchased. Pursuant to the BSX regulations, all repurchases made by any issuer pursuant to a securities repurchase program must be made: (1) in the open market and not by private agreement; and (2) for a price not higher than the last independent trade for a round lot of the relevant class of securities.

Dividends

During the year ended December 31, 2022, we paid cash dividends totaling \$87.3 million or \$1.76 (2021: \$87.3 million or \$1.76; 2020: \$88.9 million or \$1.76) for each common share on record as of the related record dates. The Board declared these dividends as a quarterly dividend of \$0.44 per common share for each quarter of 2022, 2021 and 2020.

For more information, see Item 3.D. "Risk Factors – Risks Relating to the Common Shares".

Cash Flows

2022 vs. 2021

Cash and cash equivalents was \$2.1 billion as at December 31, 2022, compared to \$2.2 billion as at December 31, 2021. The decrease is described below by category of operating, investing and financing activities.

For the year ended December 31, 2022, net cash provided by operating activities totaled \$219.3 million (2021: \$251.3 million). Cash flows from operating activities are generally the cash effects of transactions and other events that enter into the determination of net income. Cash provided by operating activities decreased by \$32.1 million from 2021 to 2022, due primarily to movements in other assets and liabilities, reduced depreciation and amortization and partially offset by an increase in net income.

Net cash provided by investing activities for the year ended December 31, 2022 totaled \$292.0 million, compared to cash used in investing activities of \$1,905.7 million in 2021. The \$2,197.7 million increase in cash provided by investing activities in 2022 was mainly attributable to the reduced purchases of investments in securities due to reduced depositor funding.

Net cash used in financing activities totaled \$506.8 million in 2022, compared to net cash provided by financing activities of \$535.8 million in 2021. The \$1,042.6 million decrease is mainly due to reduced deposit liabilities partially offset by common share repurchases.

2021 vs. 2020

Cash and cash equivalents was \$2.2 billion as at December 31, 2021, compared to \$3.3 billion as at December 31, 2020. The decrease is described below by category of operating, investing and financing activities.

For the year ended December 31, 2021, net cash provided by operating activities totaled \$251.3 million (2020: \$188.2 million). Cash flows from operating activities are generally the cash effects of transactions and other events that enter into the determination of net income. Cash provided by operating activities increased by \$63.2 million from 2020 to 2021, due primarily to an increase in net income as well as movements in other liabilities.

Net cash used in investing activities for the year ended December 31, 2021 totaled \$1,905.7 million, compared to cash used in investing activities of \$41.7 million in 2020. The \$1,864.0 million increase in cash used in investing activities in 2021 was mainly attributable to the purchases of investments in securities which was driven by both increased depositor funding as well as the redeployment of funds from cash and cash equivalents.

Net cash provided by financing activities totaled \$535.8 million in 2021, compared to net cash provided by financing activities of \$546.4 million in 2020. The \$10.7 million decrease is mainly due to a decreases in common share repurchases during the year and partially offset by a reduced increase in deposit liabilities and the issuance of subordinated debt in 2020.

Contractual Obligations

Credit-Related Arrangements

See "Note 12: Credit related arrangements, repurchase agreements and commitments" to our audited consolidated financial statements as at December 31, 2022 for additional information.

Contractual Obligations

The following table presents our outstanding contractual obligations as at December 31, 2022:

(in millions of \$)	Total	Less than 1 year	1 to 3 years	3 to 5 years	After 5 years
Long term debt ⁽¹⁾	175.0	—	—	175.0	—
Sourcing arrangements ⁽²⁾	42.9	12.6	21.7	8.6	—
Term deposits	3,107.2	3,020.1	87.2	—	—
Other obligations	25.5	12.9	9.1	2.2	1.4
Total outstanding contractual obligations	3,350.7	3,045.6	117.9	185.7	1.4

(1) Long-term debt excludes interest and unamortized debt issuance costs.

(2) We have an outstanding contractual obligation relating to a five-year agreement entered into in November 2021 with DXC to supply technology infrastructure and application development management, information security and technical support for our locations in Bermuda and the Cayman Islands. Under our agreement with DXC, server management and maintenance, technology field support, application support and development and help desk functions are managed by DXC.

See "Note 12: Credit related arrangements, repurchase agreements and commitments" to our audited consolidated financial statements as at December 31, 2022 for additional information.

Interest expense on our contractual obligations relates primarily to deposit liabilities and our long-term debt. Interest expense on customer deposits was \$45.2 million for the year-ended December 31, 2022, compared to \$15.5 million and \$25.1 million for the years ended December 31, 2021 and 2020, respectively. Movements in interest expense on deposit liabilities are due primarily to market interest rate movements, with yearly average deposits liabilities of \$13.3 billion, \$13.7 billion and \$12.1 billion for 2022, 2021 and 2020, respectively. The increase in the expense is related primarily to a rapid increase in market interest rates during the year and partially offset by lower average deposit volumes.

Capital Commitments

In 2021, the Bank embarked on a significant information technology project intended to modernize and upgrade its technology applications and infrastructure. It is a three-year programme that will improve the efficiency and stability of the Bank's technology estate and enhance the Bank's ability to provide broader and better digital solutions to its clients. The project is anticipated to be completed towards the end of 2023.

The Bank is expected to spend between \$30 million to \$40 million over the three year project horizon, which will be funded by existing cash resources.

The Bank has established a project management steering committee and program office. The steering committee consists of senior and executive members of management and reports directly to the Board.

For more information, see Item 3.D. "Risk Factors - Risks Relating to Risk Oversight and Internal Controls - Our operations are reliant on effective implementation and use of technology and require us to adapt to new technologies, and a breach, interruption or failure of our technology services or the inability to effectively integrate new technologies could have an adverse effect on our business, financial condition or results of operations."

See also "Note 12: Credit related arrangements, repurchase agreements and commitments" to our audited consolidated financial statements as at December 31, 2022 for additional information.

C. Research and Development, Patents and Licenses, etc.

Not applicable.

D. Trend Information

See discussion in Item 5.A. "Operating Results" for a description of the trend information relevant to us.

E. Critical Accounting Estimates

The Bank's significant accounting policies conform to GAAP and are described in Note 2 of our audited consolidated financial statements. Various elements of our accounting policies, by their nature, are inherently subject to estimation techniques, valuation assumptions and other subjective assessments. Given the sensitivity of our consolidated financial statements to these critical accounting policies, the use of other judgments, estimates and assumptions could result in material differences in our results of operations or financial condition. Details of certain critical policies and estimates that affect our business results are summarized below:

Allowance for Credit Losses

Accounting for Financial Instruments - Credit losses

On January 1, 2020, the Bank adopted Accounting Standards Update ("ASU") 2016-13 Financial Instruments – Credit Losses (Topic 326). Accordingly, from the date of adoption, the Bank uses a current expected credit loss model ("CECL") which is based on expected losses. The model used by the Bank up to December 31, 2019 to estimate credit losses was based on incurred losses. The CECL model is applied by the Bank to the measurement of credit losses on financial instruments at amortized cost, including loan receivables and HTM debt securities. The Bank also applies the CECL model to certain off-balance sheet credit exposures such as undrawn loan commitments, standby letters of credit, financial guarantees, and other similar instruments. In line with Topic 326, the Bank will present credit losses on AFS securities as a valuation allowance rather than as a direct write-down. Changes in expected credit losses are recorded through the respective credit loss allowances on the consolidated balance sheets as well as in the provision for credit losses (recoveries) in the consolidated statements of operations.

The Bank's purchased credit-impaired ("PCI") loans outstanding as at January 1, 2020 were classified as purchased credit deteriorated ("PCD") loans and both the amortized cost and an allowance for expected credit losses are disclosed and included with other non-PCD loans figures. The Bank will continue to recognize the amortization of the noncredit discount, if any, as interest income based on the yield of such assets.

The Bank has not restated comparative information previously accounted for under the incurred loss and the PCI models. The total adjustment resulting from the adoption of this methodology on the opening balance of the Bank's accumulated deficit as at January 1, 2020 was a negative adjustment of \$7.8 million relating to the Bank's loan portfolio.

Under the CECL model, the Bank collects and maintains attributes as they relate to its financial instruments that are within the scope of CECL including fair value of collateral, expected performance over the lifetime of the instruments and reasonable and supportable assumptions about future economic conditions. The Bank's measurement of expected losses takes into account historical loss information and is primarily based on the product of the respective instrument's probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD"). For AFS securities, any allowance for credit losses is based on an impairment assessment.

The Bank made the accounting policy election to write off accrued interest receivable on loans that are placed on non-accrual status by reversing the then accrued interest balance against interest income revenue.

The Bank maintains an allowance for credit losses, which in management's opinion is adequate to absorb all estimated credit-related losses that are expected in its lending and off-balance sheet credit-related arrangements at the balance sheet date.

Management measures expected credit losses on HTM and AFS debt securities on a collective basis by major security type when similar risk characteristics exist, or failing that, on an individual basis.

For AFS debt securities in an unrealized loss position, the Bank first assesses whether it intends to sell, or it is more likely than not that it will be required to sell the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through income. For AFS debt securities that do not meet the aforementioned criteria, the Bank evaluates whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, management considers the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions specifically related to the security, among other factors. If this assessment indicates that a credit loss exists, the present value of cash flows expected to be collected from the security are compared to the amortized cost basis of the security. If the present value of cash flows expected to be collected is less than the amortized cost basis, a credit loss exists and an allowance for credit losses is recorded for the credit loss, limited by the amount that the fair value is less than the amortized cost basis. Any impairment that has not been recorded through an allowance for credit losses is recognized in other comprehensive income.

Losses are charged against the allowance when management believes the uncollectibility of an AFS debt security is confirmed or when either of the criteria regarding intent or requirement to sell is met.

The allowance for credit losses on loans is a valuation account that is deducted from the loans' amortized cost basis to present the net amount expected to be collected on the loans. Loans are charged off against the allowance when management believes the uncollectibility of a loan balance is confirmed. Expected recoveries typically do not exceed the aggregate of amounts previously charged-off and expected to be charged-off.

Management estimates the allowance balance using relevant available information, from internal and external sources, relating to past events, current conditions, and reasonable and supportable forecasts as well as the Bank's internal risk rating framework. Historical credit loss experience provides the basis for the estimation of expected credit losses. Adjustments to historical loss information are made for differences in the current-loan specific risk characteristics such as differences in underwriting practices, vintage, portfolio mix, delinquency level and term as well as changes in environmental conditions, such as changes in macroeconomic factors and collateral values.

The allowance for credit losses is measured on a collective pool basis when similar risk characteristics exist. In each of its jurisdictions, the Bank has identified the following portfolio segments: residential mortgages, consumer loans (including overdrafts), commercial loans, commercial overdrafts, commercial real estate loans and credit cards. For loans and overdrafts, management uses a PD and LGD model to estimate the allowance for credit losses. Loans that do not share risk characteristics are evaluated on an individual basis. Loans evaluated individually are not included in the collective evaluation. For credit cards, management uses a loss rate to estimate expected credit losses.

Expected credit losses are estimated over the contractual term of the loans. The contractual term excludes potential extensions, renewals and modifications unless management has a reasonable expectation at the reporting date that the extension or renewal options included in the original contract will occur or that a troubled debt restructuring will be executed. Credit card receivables do not have stated maturities, therefore establishing a contractual term is performed by using an analytical approximation of behavior.

Fair Value of financial instruments

We define fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. We determine the fair values of assets and liabilities based on the fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The relevant accounting standard describes three levels of inputs that may be used to measure fair value. Equity securities and debt instruments classified as AFS, and derivative assets and liabilities are recognized in the consolidated balance sheet at fair value.

Fair value inputs are considered Level 1 when based on unadjusted quoted prices in active markets for identical assets.

We determine fair value based on quoted market prices, where available. If quoted prices are not available, fair value is estimated based upon other observable inputs, and may include valuation techniques such as present value cash flow models or other conventional valuation methods. In addition, when estimating the fair value of assets, we may use the quoted price of similar assets, if available.

We use unobservable inputs when observable inputs are not available. These inputs are based upon our judgments and assumptions, which represent our assessment of the assumptions market participants would use in pricing the asset or liability, which may include assumptions about risk, counterparty credit quality and liquidity and are developed based on the best information available. The use of different assumptions could produce significantly different results, which could have material positive or negative effects on the Bank's results of operations.

Significant assets measured at fair value on a recurring basis include our US government and federal agencies investments, non-US government debt securities, and residential mortgage-backed securities. The fair values of these instruments are generally sourced from an external pricing service and are classified as Level 2 within the fair value hierarchy. The service's pricing models use predominantly observable valuation inputs to measure the fair value of these securities under both the market and income approaches.

Fair value is also used on a nonrecurring basis to evaluate certain assets for impairment or for disclosure purposes. Examples of nonrecurring uses of fair value include OREO, loan impairments for certain loans and goodwill.

We review and update the fair value hierarchy classifications on a quarterly basis. We also verify the accuracy of the pricing provided by our primary external pricing service on a quarterly basis.

During the year ended December 31, 2022, there were no transfers between Level 1 and Level 2 and there was a transfer out of Level 3 and into Level 2 due to increased price observability. There were no transfers between Level 1 and Level 2 or Level 2 and Level 3 during the year ended December 31, 2021.

Refer to "Note 17: Fair value measurements" of the audited consolidated financial statements for further detail on the judgments made in classifying instruments in the fair value hierarchy.

Impairment of Goodwill

We account for acquisitions using the acquisition method of accounting, under which the acquired company's net assets are recorded at fair value at the date of the acquisition and the difference between the fair value of consideration and fair value of the net assets acquired is recorded as goodwill, if positive, and as a bargain purchase gain, if negative.

Goodwill is tested annually in the third quarter for impairment at the reporting unit level, or more frequently if events or circumstances indicate there may be impairment. The goodwill impairment analysis is a two-step test. The first step, used to identify potential impairment, involves comparing each reporting unit's fair value to its carrying value including goodwill. If the fair value of a reporting unit exceeds its carrying value, applicable goodwill is deemed to be not impaired. If the carrying value exceeds fair value, there is an indication of impairment and the second step is performed to measure the amount of impairment.

The second step involves calculating an implied fair value of goodwill for each reporting unit for which the first step indicated impairment. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination, which is the excess of the fair value of the reporting unit, as determined in the first step, over the aggregate fair values of the individual assets, liabilities and identifiable intangible assets as if the reporting unit were being acquired in a business combination. If the implied fair value of goodwill exceeds the carrying value of goodwill assigned to the reporting unit, there is no impairment. If the carrying value of goodwill assigned to a reporting unit exceeds the implied fair value of the goodwill, an impairment charge is recorded for the excess. An impairment loss recognized cannot exceed the amount of goodwill assigned to a reporting unit, and the loss establishes a new basis in the goodwill. Subsequent reversal of goodwill impairment losses is not permitted.

We rely on several assumptions when estimating the fair value of our reporting units using the discounted cash flow method. These assumptions include the estimated future cash flows from operations, required discount rate, as well as projected loan losses, an estimate of terminal value and other inputs. Our estimated future cash flows are largely based on our historical actual cash flows and industry and economic trends, among other considerations. Although management has used the estimates and assumptions it believes to be most appropriate in the circumstances, it should be noted that even relatively minor changes in certain valuation assumptions used in management's calculation would result in significant differences in the results of the impairment test.

The valuation of goodwill is dependent on forward-looking expectations related to nationwide and local economic conditions and our associated financial performance. In the future, if our acquisitions do not yield expected returns or there are changes in discount rates, we may be required to take additional charges to our earnings based on the impairment assessment process, which could harm our business, financial condition, results of operations and prospects. We had \$22.9 million of goodwill as of December 31, 2022 and \$25.4 million as of December 31, 2021, and the results of the impairment analysis for both annual periods resulted in no impairment being required.

Employee Benefit Plans

We maintain trustee pension plans for substantially all employees as either non-contributory defined benefit plans or defined contribution plans. Benefits under the defined benefit plans are primarily based on the employee's years of credited service and average annual salary during the final years of employment as defined in the plans. We also provide post-retirement medical benefits for certain qualifying active and retired Bermuda-based employees.

The calculations of the amounts recorded require the use of various actuarial assumptions, such as discount rates, assumed rates of return on plan assets, compensation increases, and turnover rates. We review our actuarial assumptions on an annual basis and make modifications to the assumptions based on current rates and trends when appropriate. We believe that the assumptions used in recording our defined benefit plan obligations are reasonable based on our experience and advice from our actuaries.

The post-retirement medical benefits obligation is determined using our assumptions regarding health care cost trend rates. The health care trend rates are developed based on historical cost data, the near-term outlook on health care trends and the likely long-term trends.

In accordance with GAAP, actual results that differ from these assumptions are accumulated and amortized over future periods and, therefore, generally affect recognized expenses and the recorded obligation of future periods. While management believes that the assumptions used are appropriate, differences in actual experience or changes in assumptions may affect the defined benefit obligations and future expense.

See "Note 11: Employee benefit plans" to our audited consolidated financial statements as at December 31, 2022 for more information on our pension plans and post-retirement medical benefit plan, along with the key actuarial assumptions.

Share-based Compensation

We engage in equity settled share-based payment transactions in respect of services received from eligible employees. The fair value of the services received is measured by reference to the fair value of the shares or share options granted on the date of the grant. The cost of the employee services received in respect of the shares or share options granted is recognized in the consolidated statements of operations over the shorter of the vesting or service period.

The fair value of the options granted is determined using option pricing models, which take into account the exercise price of the option, the current share price, the risk-free interest rate, expected dividend rate, the expected volatility of the share price over the life of the option and other relevant factors. The fair value of unvested share awards is deemed to be the closing price of the publicly traded Bank shares on the grant date. The fair value of time vesting conditions are taken into account by adjusting the number of shares or share options included in the measurement of the cost of employee services so that ultimately, the amount recognized in the consolidated statements of operations reflects the number of vested shares or share options. The Bank recognizes compensation cost for awards with performance conditions if and when the Bank concludes that it is probable that the performance condition will be achieved, net of an estimate of pre-vesting forfeitures (e.g., due to termination of employment prior to vesting).

See "Note 21: Share-based payments" to our audited consolidated financial statements as at December 31, 2022 for more information on share-based compensation.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

Board

Our Board oversees the affairs of the Bank. The current Board is composed of ten members, consisting of our Chairman & Chief Executive Officer, President & Group Chief Risk Officer and eight non-executive independent directors. The Bank's bye-laws provide that the Board shall consist of not less than six and not more than twelve directors. The Board holds regular meetings five times per year and ad hoc meetings as necessary.

Persons may be proposed for election or appointed as directors at a general meeting either by the Board or by one or more shareholders holding shares which in the aggregate carry not less than 5% of the voting rights in respect of the election of directors. There is only a single class of director and each director holds office until the next annual general meeting.

As an FPI we are allowed to follow our "home country" corporate governance practices in lieu of the NYSE governance requirements for NYSE-listed US companies. Notwithstanding this, our Board has determined that, under current NYSE listing standards regarding independence (to which we are not currently subject), and taking into account any applicable committee standards, a majority of our Board, including Alastair Barbour, Sonia Baxendale, James Burr, Mark Lynch, Ingrid Pierce, Jana Schreuder, Pamela Thomas-Graham and John Wright, are independent directors.

As the regulatory environment in which we operate becomes more complex, our governance practices and the structures and methodology we use to operate the Bank continue to be of key strategic significance. With the exception of the Chairman & Chief Executive Officer and President & Group Chief Risk Officer, our Board is comprised entirely of Directors who are not employees of the Bank. Our Board reviews and oversees the Bank's implementation of corporate governance policies and practices in accordance with prevailing standards. The following table lists the names, positions and ages of the Directors of the Bank:

Name	Age	Position
Michael Collins	59	Chairman & Chief Executive Officer
Alastair Barbour	70	Lead Independent Director
Sonia Baxendale	60	Non-Executive Director
James Burr	57	Non-Executive Director
Mark Lynch	61	Non-Executive Director
Ingrid Pierce	53	Non-Executive Director
Jana Schreuder	64	Non-Executive Director
Michael Schrum	54	President & Group Chief Risk Officer
Pamela Thomas-Graham	59	Non-Executive Director
John Wright	81	Non-Executive Director

Each of our directors may be reached at our registered office at: 65 Front Street, Hamilton, HM 12, Bermuda, or by postal mail at P.O. Box HM 195, Hamilton HM AX, Bermuda.

Michael Collins joined the Board in 2015 when he was named Chief Executive Officer of the Bank. He was named Chairman in July of 2017. Prior to this appointment, Mr. Collins was Senior Executive Vice President with responsibility for all of the Bank's client businesses in Bermuda, including Corporate, Private and Retail Banking, as well as the Operations, Custody and Marketing functions in Bermuda and the Cayman Islands. Mr. Collins has more than 40 years of experience in financial services, having held progressively senior positions at Morgan Guaranty Trust Company in New York and later at Bank of Bermuda and HSBC in Bermuda. Before joining the Bank in 2009, Mr. Collins was Chief Operating Officer at HSBC Bank Bermuda. Mr. Collins holds a BA in Economics from Brown University.

Alastair Barbour joined the Board in 2012 and was appointed Lead Independent Director in October 2021. He is a Chartered Accountant with more than 25 years of experience providing auditing and advisory services to publicly traded companies, primarily in the financial services industry. Mr. Barbour was employed with KPMG from 1978 until his retirement in 2011. During his time there, he held various positions both locally and overseas. In 1985, he was named a Partner at KPMG (Bermuda). Mr. Barbour's most recent position was head of KPMG's Financial Services Group in Scotland. Currently, Mr. Barbour serves on the Board of Directors of several public and private companies, including as non-executive Chairman of Liontrust Asset Management plc and Phoenix Group Holdings plc. Mr. Barbour trained with Peat, Marwick, Mitchell & Co. in London and holds a Bachelor of Science from the University of Edinburgh. He is a Fellow of the Institute of Chartered Accountants in England & Wales.

Sonia Baxendale joined the Board in 2020. She is currently the President and CEO of the Global Risk Institute, a government, industry and academic partnership. From 1992 to 2011, Ms. Baxendale held senior leadership roles within Canadian Imperial Bank of Commerce ("CIBC"), including six years as Senior Executive Vice President and President of Retail Banking and Wealth Management. Prior to joining CIBC, Ms. Baxendale held progressively senior positions with Saatchi & Saatchi and American Express Canada. Ms. Baxendale serves on the Boards of several public and private companies, including Foresters Financial and Laurentian Bank of Canada. Ms. Baxendale also serves as Chair of the Board of Directors of the Hospital for SickKids Foundation and on the Board of Trustees for Toronto's Hospital for Sick Children. She holds a Bachelor of Arts in Political Science and Economics from Victoria College, University of Toronto.

James Burr joined the Board in 2016 and served as Lead Independent Director from October 2018 until October 2021. Mr. Burr is a Managing Director in the Global Financial Services Group of The Carlyle Group, where he focuses on investing in management buyouts, growth capital opportunities and strategic minority investments in financial services. Prior to joining Carlyle, Mr. Burr served as Corporate Treasurer of Wachovia Bank, where he was responsible for activities relating to funding, investing, risk transference, balance sheet management, liquidity and capital usage. He served in various other roles at Wachovia Bank, including as Assistant Treasurer, Controller of the Corporate and Investment Bank and Management Analyst. Mr. Burr began his career at Ernst & Young, where he was a certified public accountant focused on banking and computer audit issues. Mr. Burr formerly served on the Board of Directors of Central Pacific Financial Corp. and currently serves as a Director of several private companies, including The Hilb Group, Benefit Mall and NSM Insurance Group.

Mark Lynch joined the Board in 2019. Until June 30, 2019, he was a partner of Boston-based Wellington Management Co., where he served as the firm's senior financial services analyst since 1994 and a partner since 1996. He was also a portfolio manager of mutual funds, hedge funds, and institutional portfolios over that period. Prior to joining Wellington, Mr. Lynch was a US regional bank analyst with Lehman Brothers and Bear Stearns. He holds a degree in European History from Harvard College.

Ingrid Pierce joined the Board in December 2022. She is the Global Managing Partner of Walkers, a leading international law firm that provides legal, corporate, fiduciary and compliance services to global corporations, financial institutions, capital markets participants and investment fund managers. Recognized as one of the world's leading investment funds lawyers, she acts for major institutions, asset managers, insurers, reinsurers, trustees and other fiduciaries. Ms. Pierce was made a partner of Walkers in 2008 having joined the firm in 2002. She practiced in the Insolvency and Dispute Resolution Group, Trusts Group and Investment Funds Group, where she became head of the Cayman Islands practice. Prior to Walkers, Ms. Pierce spent nearly a decade working as a Barrister in London in the commercial chancery field. Ms. Pierce serves as a member of the Board of Directors of Lex Mundi, the world's leading network of independent law firms, and is a member of the Society of Trust and Estate Practitioners (STEP). She holds a Bachelor of Laws from University College London (UCL) and was admitted to the Bar of England and Wales (1992) (not practicing), the Cayman Islands (2002) and the British Virgin Islands (2002).

Jana Schreuder joined the Board in 2020. She is an experienced executive who most recently served as Executive Vice President and Chief Operating Officer of Northern Trust Corporation, a role from which she retired in 2018. Ms. Schreuder joined Northern Trust in 1980 and during her tenure held multiple roles as a member of the executive management team, including: the President of Wealth Management from 2011 through 2014; President of Operations & Technology from 2007 through 2010; and Chief Risk Officer from 2005 through 2006. Ms. Schreuder currently serves as a Director and Chair of the Compensation Committees of Kyndryl Holdings Inc. and Avantax, Inc. (formerly Blucora). Since 2008, Ms. Schreuder has served as a Director and is currently Chair of the Compensation Committee for Entrust Corporation. From 2016 to 2018, Ms. Schreuder was a member of the Board of Directors of LifePoint Health. Ms. Schreuder received her Bachelor of Business Administration degree from Southern Methodist University and a Master's degree in finance and marketing management from Northwestern University's Kellogg Graduate School of Management. Ms. Schreuder is a member of the New York Chapter of Women Corporate Directors and the National Association of Corporate Directors, from which she has received the NACD Directorship Certification.

Michael Schrum joined the Board in 2020. He was appointed President & Group Chief Risk Officer in May 2022 and served as Group Chief Financial Officer from 2015. He was previously Chief Financial Officer at HSBC Bank Bermuda. Mr. Schrum has more than 25 years of financial services experience in London, New York and Bermuda, mainly in banking, insurance and tax. He joined HSBC in Bermuda in 2001 and held progressively more senior positions within the bank's Commercial Banking, Strategy, and Finance divisions. He is a CFA Charterholder (CFA Institute), and a Fellow Chartered Accountant (Institute of Chartered Accountants in England and Wales). Mr. Schrum holds a Master's (University of London) and Bachelor's (Southern Denmark Business School) degree in Economics.

Pamela Thomas-Graham joined the Board in 2017. She is the Founder and Chief Executive Officer of Dandelion Chandelier LLC, a private digital media enterprise focused on the intersection of luxury, marketing and technology. Prior to establishing Dandelion Chandelier, Ms. Thomas-Graham spent six years with Credit Suisse where she served as Chief Talent, Branding and Communications Officer, and Chief Marketing and Talent Officer & Head of Private Banking and Wealth Management New Markets. From 2008 to 2010, she was Managing Director of the private equity firm, Angelo, Gordon & Company, leading the firm's investments in the consumer and retail sectors. Before assuming leadership roles in financial services, Ms. Thomas-Graham was Senior Vice President, Global Brand Development and Group President, Apparel Brands at Liz Claiborne (now Kate Spade & Company) where she was responsible for the P&L of 18 global brands. Prior to joining Liz Claiborne, she spent six years at NBC Universal, where she served as President and Chief Executive Officer of CNBC.com, and later President and Chief Operating Officer, and Chairman, President and Chief Executive Officer of CNBC. Ms. Thomas-Graham began her career at global consulting firm McKinsey & Company in 1989, and became the firm's first African-American female partner in 1995. She serves as a Director for several listed companies, including Rivian Automotive, Inc., Compass, Inc., Peloton Interactive, Inc. and Bumble Inc. Ms. Thomas-Graham holds Bachelor of Arts in Economics, Masters of Business Administration, and Doctor of Law degrees from Harvard University.

John Wright joined the Board in 2002. Mr. Wright served as a non-executive director of Butterfield UK from 2001 through 2014. Mr. Wright retired as chief executive of Clydesdale & Yorkshire Banks in 2001. Mr. Wright's career in commercial banking spans over 43 years and includes assignments in the UK, India, Sri Lanka, West Africa, Canada, Hong Kong and the United States. He is a visiting Professor at Heriot-Watt University Business School and he serves on the Board of Directors of several public and private U.K. and overseas companies, including XM International Associates Limited, where he serves as Chairman of the Advisory Board, and Rasmala UK Limited. He is also a past President of the Irish Institute of Bankers and a past Vice President of the Chartered Institute of Bankers in Scotland. Mr. Wright was educated at Daniel Stewart's College Edinburgh.

Executive Management Team

The Group's current executive management team is as follows:

Name	Age	Position
Michael Collins	59	Chairman & Chief Executive Officer
Craig Bridgewater	53	Group Chief Financial Officer
Andrew Burns	44	Group Head of Human Resources
Kevin Dallas	44	Group Head of Marketing and Communications
Bri Hidalgo	43	Group Head of Compliance and Operational Risk
Michael McWatt	57	Managing Director, Cayman
Shaun Morris	62	General Counsel & Group Chief Legal Officer
Michael Neff	59	Managing Director, Bermuda and International Wealth
Jane Pearce	53	Group Head of Trust
Richard Saunders	53	Managing Director, Channel Islands and the UK
Michael Schrum	54	President & Group Chief Risk Officer

Each member of our executive management team may be reached at our registered office at 65 Front Street, Hamilton, HM 12, Bermuda, or by postal mail at P.O. Box HM 195, Hamilton HM AX, Bermuda.

Craig Bridgewater was appointed Group Chief Financial Officer in May 2022 having served as Group Head of Finance since 2019. Prior to joining Butterfield, Mr. Bridgewater was a Partner at KPMG where he spent 18 years working in both Bermuda and the US with responsibility for clients in banking, asset management and insurance-linked securities in addition to prominent local industries including retail and hospitality. Before KPMG, Mr. Bridgewater worked at Orbis Investment Management Limited and Price Waterhouse (now PricewaterhouseCoopers) where he began his career. He is a Fellow of the Chartered Professional Accountants of Bermuda and Canada. He holds a Bachelor of Arts (Honours) degree (Carleton University, Ottawa) in Economics.

Andrew Burns was named Group Head of Human Resources in September 2020. He was previously Group Head of Internal Audit from 2016, and became a member of the Executive Committee in October 2017. Mr. Burns has more than 20 years of progressive leadership experience in the financial services sector, having begun his career with PricewaterhouseCoopers' financial services group in Australia. He first joined the Butterfield Group of companies in the Fund Services subsidiary in Bermuda before transferring to the Internal Audit team in 2007, where he held progressively senior management roles. Mr. Burns is a Chartered Accountant and a Certified Internal Auditor. He holds a Bachelor of Commerce degree from the University of Melbourne, Australia.

Kevin Dallas joined Butterfield as Group Head of Marketing and Communications in October 2020. Mr. Dallas was previously Chief Executive Officer at the Bermuda Tourism Authority from 2017 to 2020, overseeing the strategy, operations, and financial management of Bermuda's independent public authority, which focuses on delivering economic growth through tourism. He was previously Chief Product and Marketing Officer at Worldpay Group plc (2013 to 2016), and spent 13 years at Monitor Group LLP and Bain & Company Inc., as a Partner, in London and Johannesburg. Mr. Dallas holds a Bachelor of Arts degree in Economics from Brown University.

Bri Hidalgo joined Butterfield as Group Head of Compliance and Operational Risk in September 2020. Before joining Butterfield, Ms. Hidalgo spent 14 years with Wells Fargo Bank in compliance and risk management roles, with her most recent role having been Chief Risk Officer, Wealth & Investment Management. Prior to joining Wells Fargo, she worked in senior risk management and compliance roles at Wachovia Securities and First State Investments in the US and the UK. Ms. Hidalgo holds a Bachelor of Science degree from San Francisco State University.

Michael McWatt currently serves as Managing Director for Butterfield Bank (Cayman) Limited, with responsibility for the overall operations of the bank in the Cayman Islands. Mr. McWatt joined the Group in 1999 and was appointed Managing Director in 2016. He has held progressively senior leadership positions with the Group, including Deputy Managing Director, EVP Group Head of Community Banking and SVP Group Chief Credit Officer. Mr. McWatt is a career banker with more than 30 years of experience in Canada, Bermuda and the Cayman Islands. Prior to joining Butterfield, he held progressively senior positions in Corporate Banking and Risk Management in Canada. Mr. McWatt holds a BA in Economics from McMaster University, an Honors Commerce Degree from University of Windsor and is a graduate of the Ivey Executive Program at Western University. He is a Director and past president of the Cayman Islands Bankers' Association and is a Director of Cayman Finance.

Shaun Morris currently serves as General Counsel and Group Chief Legal Officer. Mr. Morris joined the Group as General Counsel and Group Chief Legal Officer in 2012. From 2005 to 2012, Mr. Morris was the Managing Partner of Appleby's Bermuda Office. Prior to joining Butterfield, Mr. Morris spent his entire professional career at Appleby and was a Partner in the Banking and Asset Finance team in Bermuda. In that role, he practiced corporate and commercial law, specializing in shipping, capital markets, mergers & acquisitions and project finance. Mr. Morris holds an MA (Economics) from Dalhousie University in Canada and a Bachelor of Laws from the London School of Economics & Political Science. He is currently a member of the Bermuda Bar Association.

Michael Neff currently serves as Managing Director, Bermuda and International Wealth. He previously served as the Bank's Group Head of Wealth Management. Mr. Neff has over 30 years' experience in financial services, having held senior roles in wealth management, commercial banking, client services, and business development functions. He began his career at Chemical Bank's Private Banking Group where he ultimately served on the Executive Committee and led relationship management across the group. Mr. Neff then led the implementation of the global wealth management client relationship model at Citibank's Private Bank before leaving to establish AnswerSpace Inc., a financial planning technology consultancy in 1998. He went on to found Monetaire Inc., a leading provider of financial and investment planning software that was acquired by the RiskMetrics Group. At RiskMetrics, he initially served as Global Head of Wealth Management, rising to become Co-Head of the firm's Global Financial Risk Management business in 2009. Mr. Neff holds a Bachelor of Arts from Middlebury College and a Master of Business Administration from Columbia Business School.

Jane Pearce joined Butterfield as Group Head of Trust in 2020 with responsibility for the delivery of the Group Trust strategy and value proposition across all jurisdictions. Prior to joining Butterfield, she was Regional Managing Director of Vistra's UK, Ireland and Channel Islands businesses. She has previously worked in senior positions at several Jersey-based firms, including EY, Deutsche Bank, Kleinwort Benson, and Ogier. Ms. Pearce is a regular speaker at industry events and has been named to the Citywealth Leaders List and the IFC Powerwomen Top 200. She is a Fellow of the Association of Chartered Certified Accountants, and holds degrees from Teesside University and the Scottish School of Physical Education.

Richard Saunders currently serves as Managing Director, Channel Islands, with responsibility for Butterfield Bank (Guernsey) Limited, Butterfield Bank (Jersey) Limited and Butterfield Mortgages Limited in London. Mr. Saunders joined the Group in 2001 and was appointed Managing Director in 2015. He has held progressively senior leadership positions with the Group, including Head of European Asset Management. Mr. Saunders joined the Butterfield Group Executive Committee in July 2018. He has more than 25 years of progressive management experience, having begun his career at Royal Bank of Canada in Guernsey. Mr. Saunders is a Chartered Member of the London-based Chartered Institute for Securities & Investment and holds a Bachelor's degree in Mathematics and Sports Science from Loughborough University, England.

B. Compensation

Senior Management and Director Compensation

In 2022, senior management included the following executives: Michael Collins, Craig Bridgewater, Andrew Burns, Kevin Dallas, Bri Hidalgo, Michael McWatt, Shaun Morris, Michael Neff, Jane Pearce, Richard Saunders and Michael Schrum. Our compensation program is designed to reward and retain senior management and includes base salary, annual short-term cash and equity incentive compensation, long-term equity incentive compensation and miscellaneous employee benefits and fringe benefits (including, among others, executive medical benefits). In 2022, our compensation program for directors was comprised of an annual cash retainer and an equity grant. Directors can elect to receive the annual cash retainer in common shares. None of our directors have entered into service contracts with the Group that provide for benefits upon the termination of their service as a director.

The CEO is required to own a minimum aggregate value of our common shares equal to five times base salary. Eligible stock includes vested shares, unvested restricted stock and restricted stock units, and other stock held by the CEO. The intrinsic value of vested or unvested stock options is not considered eligible stock. The CEO complies with this requirement. If the market value of the CEO's common stock falls below the requirements, the CEO must retain 50% of the shares he receives as compensation until he achieves the specified ownership level.

Effective April 2020, senior management are required to own a minimum aggregate value of our common shares equal to two times base salary by December 31, 2022, or within five years following first appointment. Eligible stock includes vested shares, unvested restricted stock and restricted stock units, and other stock held by senior management. The intrinsic value of vested or unvested stock options is not considered eligible stock. If the market value of senior management's common stock falls below the required threshold, senior management must retain 50% of the shares they receive as compensation until they achieve the specified ownership level. All members of senior management currently or intend to comply with this requirement.

The aggregate amount of compensation, including the value of in-kind benefits, accrued and/or paid to our directors and senior management during the fiscal year 2022 was \$23.2 million. Amounts accrued during 2022, include contingent or deferred compensation plans.

Short-Term Incentive Compensation

Senior management participates in our annual discretionary bonus program. Our Compensation & Human Resources Committee establishes an annual bonus pool based on overall company-wide performance during the applicable fiscal year. Once the compensation committee has approved the pool, the pool is allocated to eligible employees, including senior management, based on the employee's achievement of pre-established performance goals during the applicable fiscal year. Annual bonuses for executives are paid 50% in cash and 50% in the form of restricted stock unit awards that vest in three equal installments on the first three anniversaries of the date of grant. The plans under which share awards are granted are described below.

Equity Compensation

The Group sponsors two equity incentive plans in which our senior management and directors have been or are eligible to participate: the 2010 Omnibus Share Incentive Plan (the "2010 Plan") and the 2020 Omnibus Share Incentive Plan (the "2020 Plan"). The Group previously granted equity awards under the 2010 Plan, which was replaced with the adoption of the 2020 Plan. Awards granted pursuant to the 2010 Plan prior to the adoption of the 2020 Plan that remain outstanding will continue to be governed by the 2010 Plan, but no new awards are issued thereunder. The Group currently grants restricted stock unit and performance-vesting restricted stock unit awards under the 2020 Plan. As at December 31, 2022, in the aggregate, our members of senior management held 1,023,262 restricted stock units (assuming that performance with respect to performance-vesting restricted stock unit awards is satisfied at target levels) and no options.

Senior management participates in our long-term equity incentive compensation program. During 2022, our compensation committee granted annual restricted stock unit and performance-vesting restricted stock unit awards under our 2010 and 2020 Plan. Restricted stock unit awards granted in 2020, 2021 and 2022 were granted (i) under our long-term equity incentive compensation program in the form of performance shares, generally vesting upon the achievement of certain performance targets in the three-year period from the effective grant date, and (ii) under the omnibus programs in the form of time-based restricted stock units, generally vesting in three equal installments on the first three anniversaries of the date of grant. Certain members of senior management also participate in our 2010 and 2020 Executive Stock Purchase Plan, which allows participants to borrow against their common shares held in a restricted account to purchase common shares.

During calendar year 2022, in the aggregate, our Compensation & Human Resources Committee granted senior management 646,673 restricted stock units (which includes restricted stock unit awards granted under both the annual bonus program and as long-term equity incentive compensation, and assumes that performance with respect to performance-vesting restricted stock unit awards will be is satisfied at target levels).

C. Board Practices

The Bank's bye-laws authorize the Board to delegate certain of its duties to committees of directors. The principal board committees are the: (1) Audit Committee, (2) Risk Policy & Compliance Committee, (3) Corporate Governance Committee, and (4) Compensation & Human Resources Committee. Members of committees are appointed by, from and among the non-executive members of the Board. The responsibilities and compositions of these committees are described below.

Audit Committee

Our Audit Committee, on behalf of the Board, monitors: (1) the integrity of the financial reports and other financial information provided by the Group to any governmental body or the public; (2) the independent auditor's qualifications and independence; (3) the performance of the Group's internal audit function and the independent auditors; (4) compliance with legal and regulatory requirements with respect to financial reporting [including but not limited to those related to environmental, social and governance matters]; (5) the Group's system of internal controls regarding finance and accounting as established by management and the Board; and (6) the Group's auditing, accounting and financial reporting processes generally. Subject to shareholder approval, the Audit Committee has responsibility for the appointment or replacement of the independent auditor and for the compensation and oversight of the work of the independent auditor. In addition, the Audit Committee is responsible for approving all audit services, internal control-related services and permitted non-audit services. With respect to internal controls, the Audit Committee reviews and evaluates any major issues as to the adequacy of the Bank's internal controls, and any major control deficiencies or changes in internal controls over financial reporting are discussed with the Bank's management and the independent auditor. With respect to financial reporting, the Audit Committee consults with management and the independent auditor about the integrity of the financial reporting process, reviews significant financial reporting risk exposure and management's responses, reviews significant auditor findings and establishes and

reviews procedures for the receipt, retention and treatment of complaints about accounting and auditing matters, and reviews and recommends for the Board's approval the Group's financial reports.

Our Audit Committee consists of five directors that are independent under the NYSE requirements. Each member of the Audit Committee also meets the additional criteria for independence of Audit Committee members set forth in Rule 10A-3(b)(1) under the Exchange Act.

The members of the Audit Committee are appointed by the Board upon the recommendation of the Corporate Governance Committee. The Audit Committee's membership is as follows:

Name	Position
Alastair Barbour	Chairperson
Sonia Baxendale	Member
Mark Lynch	Member
John Wright	Member

Mr. Barbour qualifies as the Audit Committee financial expert.

Risk Policy & Compliance Committee

The Risk Policy & Compliance Committee, on behalf of the Board, acts as the oversight function in respect of those activities throughout the Group that give rise to credit, market, liquidity, interest rate, operational, cybersecurity and reputational risks and reviews compliance with laws and regulations. Specifically, the Risk Policy & Compliance Committee assists the Board in fulfilling its responsibilities by overseeing the Group's risk profile and its performance against approved risk appetites and tolerance thresholds. It approves and ensures compliance with the capital allocation model and approves overall insurance coverage for the Group. The Risk Policy & Compliance Committee also reviews the credit risk of the Group with respect to country and financial institution risk, large exposures, reserves and provisioning, off-balance sheet risk and related capital needs, as well as market, interest rate and liquidity risks. The Risk Policy & Compliance Committee monitors operational risks, including cybersecurity risks, material breaches of agreed risk limits, appropriate product risk profiles and management policies for the identification and management of risk. In doing so, the Risk Policy & Compliance Committee seeks to ensure compliance with all applicable policies and establishes the Group's risk appetite and tolerance.

The Risk Policy & Compliance Committee's membership is as follows:

Name	Position
Mark Lynch	Chairperson
James Burr	Member
Ingrid Pierce	Member
Jana Schreuder	Member

Corporate Governance Committee

The Corporate Governance Committee, on behalf of the Board, reviews the effectiveness and performance of the Directors, the Board as a whole, and each Board committee, as well as the boards and board committees of the Bank's subsidiaries through its oversight of the corporate governance guidelines and policies of the Group. This committee acts as the nomination committee for the Board. The principal duties of the Corporate Governance Committee include reviewing and recommending to the Board membership criteria and director nominees, membership of the Board's committees and matters relating to the performance, diversity and independence of directors. The Corporate Governance Committee oversees questions of director independence and conflicts of interest, induction and ongoing training for directors and the Board's corporate governance-related policies and procedures. The Corporate Governance Committee also recommends director compensation and reviews and approves related-party transactions.

The Corporate Governance Committee's membership is as follows:

Name	Position
Sonia Baxendale	Chairperson
Pamela Thomas-Graham	Member
John Wright	Member

Compensation & Human Resources Committee

The Compensation & Human Resources Committee, on behalf of the Board, reviews and approves executive compensation, employee salary ranges, levels and degrees of participation in incentive compensation programs (including bonuses and equity-based incentive plans) and oversees employee development, relations and succession. Specifically, the Compensation & Human Resources Committee evaluates the fairness and effectiveness of the compensation practices implemented by the Group, approves overall compensation packages for executives, provides regular updates on executive compensation to the Board, approves changes in employee salary ranges for employees, approves the criteria and design of the Group's incentive bonus plans and approves changes to the other employee benefit plans. The Compensation & Human Resources Committee also recommends to the Board changes in the Group's equity-based incentive plans and the granting of awards under such plans, reviews and approves changes to our pension plans, reviews periodic management reports on our compensation and benefits, as well as other matters bearing on the relationship between management and employees, while making recommendations to the Board concerning our senior level organization structure and staffing, training and employee development programs.

The Compensation & Human Resources Committee's membership is as follows:

Name	Position
Jana Schreuder	Chairperson
Alastair Barbour	Member
James Burr	Member
Pamela Thomas-Graham	Member
John Wright	Member

Governance of Geographical Segments

Our banking business operates in three geographical segments — Bermuda, the Cayman Islands, and the Channel Islands and the UK— and each geographical segment utilizes operating subsidiary companies of the Bank within these jurisdictions. See Item 4.B. "Business Overview - Our International Network and Group Structure", which presents the corporate structure chart of our principal subsidiaries as at December 31, 2022. Our principal operating subsidiaries are each regulated by their respective geographical regulator and are fully capitalized as stand-alone operating companies, each with its own board of directors consisting of both executive and non-executive independent directors, as required by the relevant regulatory body and applicable rules and regulations. Guidance on general corporate governance, board sub-committee structuring, and the various governance policies and procedures of the operating subsidiaries is determined at the Group level.

Board Leadership Structure and Qualifications

The Bank must comply with the BMA Corporate Governance Policy, which requires the Bank to appoint board members who have appropriate experience, competencies and personal qualities, including professionalism and personal integrity.

It is the Bank's policy to ensure that all companies within the Group have board members who are fit and proper persons to direct the Bank's business with prudence, integrity and professional skills. The Boards of the Bank and the Bank's subsidiaries are composed of individuals who possess diverse skills, experience and knowledge that are key to understanding the Bank's business and the execution of the Bank's strategies.

The Bank has established guidelines that address the size and composition of its own Board and those of its subsidiaries, and for identifying and selecting suitable candidates for appointment to these boards. The Corporate Governance Committee makes appointment recommendations to the Board and the appointment procedure is formal, rigorous and transparent. Each of the Bank and the Bank's subsidiary boards are reviewed as appropriate in order to assess whether the Board composition is commensurate with the Bank's strategic objective and diversity principles.

In assessing continuity of service on the Board there is a general presumption that individuals should serve for a maximum of 15 years in order that the Board tenure be refreshed. Non-executive directors who have served for a period of more than 15 years are subject to an independent assessment in accordance with applicable legal requirements and regulatory and listing standards.

Board Oversight of Risk Management

The Board believes that effective risk management and control processes are critical to our safety and soundness, our ability to predict and manage the challenges that we face and, ultimately, our long-term corporate success. The Board, both directly and through its committees, is responsible for overseeing our risk management processes, with each of the committees of the Board assuming a different and important role in overseeing the management of the risks we face.

The Risk Policy & Compliance Committee oversees our enterprise-wide risk management framework, which establishes our overall risk appetite and risk management strategy and enables our management to understand, manage and report on the risks we face. The Risk Policy & Compliance Committee also reviews and oversees policies and practices established by management to identify, assess, measure and manage key risks we face, including the risk appetite metrics developed by management and approved by the Board. The Audit Committee of the Board is responsible for overseeing risks associated with financial, accounting and legal matters (particularly financial reporting, accounting practices and policies, disclosure controls and procedures and internal control over financial reporting), reviewing and discussing generally the identification, assessment, management and control of our risk exposures on an enterprise-wide basis and engaging as appropriate with the Risk Policy & Compliance Committee to assess our enterprise-wide risk framework. The Compensation & Human Resources Committee of the Board has primary responsibility for risks and exposures associated with our compensation policies, plans and practices, regarding both executive compensation and the compensation structure generally. In particular, our Compensation & Human Resources Committee, in conjunction with our Chairman & Chief Executive Officer, Group Head of Human Resources and President & Group Chief Risk Officer and other members of our management as appropriate, reviews our incentive compensation arrangements to ensure these programs are consistent with applicable laws and regulations, including safety and soundness requirements, and do not encourage imprudent or excessive risk-taking by our employees. The Corporate Governance Committee of the Board oversees risks associated with the independence of the Board and potential conflicts of interest.

Our senior management is responsible for implementing and reporting to the Board regarding our risk management processes, including by assessing and managing the risks we face, including strategic, operational, cybersecurity, regulatory, investment and execution risks, on a day-to-day basis. Our senior management is also responsible for creating and recommending to the Board for approval appropriate risk appetite metrics reflecting the aggregate levels and types of risk we are willing to accept in connection with the operation of our business and pursuit of our business objectives.

The role of the Board in our risk oversight is consistent with our leadership structure, with our Chairman & Chief Executive Officer and the other members of senior management having responsibility for assessing and managing our risk exposure, and the Board and its committees providing oversight in connection with those efforts. We believe this division of risk management responsibilities presents a consistent, systemic and effective approach for identifying, managing and mitigating risks throughout our operations.

D. Employees

As at December 31, 2022, 2021 and 2020, we had the following employees:

	As at December 31		
	2022	2021	2020
Per segment:			
Bermuda	413	413	449
Cayman Islands	244	241	236
Channel Islands and the UK	379	369	363
Other Segment	305	254	266
Total per full-time equivalency basis	1,341	1,277	1,314
Of which:			
Full-time and part-time employees	1,261	1,217	1,258
Temporary employees	80	60	56
Total per full-time equivalency basis	1,341	1,277	1,314

The increase in 2022 from 2021 was mostly a result of the Service Center expansion in Halifax and Mauritius. The decrease in 2021 from 2020 was a result of the COVID-19 related cost restructuring program, which included voluntary separation, early retirement and redundancies across all operating segments.

We have not experienced any material employment-related issues or interruptions of services due to labor disagreements and are not a party to any collective bargaining agreements.

E. Share Ownership

See Items 6.B. "Compensation - Equity Compensation" and 7.A. "Major Shareholders".

ITEM 7. MAJOR SHAREHOLDERS AND RELATED-PARTY TRANSACTIONS

A. Major Shareholders

The following table sets forth information with respect to the beneficial ownership of our common shares as at February 15, 2023, unless noted otherwise, in each case by: each person or entity known by us to beneficially own 5% or more of our issued and outstanding common shares; each of our directors and executive officers individually; and all of our directors and executive officers as a group. As at February 15, 2023, we had approximately 50 million common shares issued and outstanding.

Under the rules of the Securities and Exchange Commission, a person is deemed to be a "beneficial owner" of a security if that person has or shares "voting power," which includes the power to vote or to direct the voting of such security, or "investment power," which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within 60 days. Under these rules, more than one person may be deemed to be a beneficial owner of such securities as to which such person has voting or investment power. Except as described in the footnotes below, to our knowledge, each of the persons named in the table below has sole voting and investment power with respect to the common shares beneficially owned, subject to community property laws where applicable.

Unless otherwise noted, the address for each shareholder listed on the table below is: c/o The Bank of N.T. Butterfield & Son Limited, 65 Front Street, Hamilton, HM 12, Bermuda.

Name of beneficial owner	Number of common shares beneficially owned	Beneficial ownership percentage
Major Shareholders:		
Capital World Investors ⁽¹⁾	2,876,843	5.7 %
Davis Selected Advisors, L.P. ⁽²⁾	3,270,744	6.5 %
FMR LLC ⁽³⁾	2,720,513	5.4 %
Directors and Executive Officers:		
Alastair Barbour	18,543	*
Sonia Baxendale	8,036	*
Andrew Burns ⁽⁴⁾	19,486	*
James Burr ⁽⁵⁾	9,188	*
Michael Collins ⁽⁶⁾	97,188	*
Kevin Dallas ⁽⁷⁾	41,533	*
Bri Hidalgo ⁽⁸⁾	5,482	*
Mark Lynch ⁽⁹⁾	181,459	*
Michael McWatt ⁽¹⁰⁾	22,007	*
Shaun Morris ⁽¹¹⁾	65,053	*
Michael Neff ⁽¹²⁾	17,466	*
Jane Pearce ⁽¹³⁾	2,575	*
Ingrid Pierce	155	*
Richard Saunders ⁽¹⁴⁾	10,407	*
Jana Schreuder	6,851	*
Michael Schrum ⁽¹⁵⁾	149,960	*
Craig Bridgewater ⁽¹⁶⁾	10,850	*
Pamela Thomas-Graham	8,585	*
John R. Wright ⁽¹⁷⁾	10,298	*
All directors and executive officers as a group (19 persons)	685,122	*

* Indicates less than 1%

- (1) Based on the Schedule 13G filed on February 13, 2023 by Capital World Investors ("CWI"), which reported that as at December 31, 2022, CWI beneficially owned 2,876,843 common shares, with sole voting and sole dispositive power over all such shares. CWI is a division of Capital Research and Management Company ("CRMC"), as well as its investment management subsidiaries and affiliates Capital Bank and Trust Company, Capital International, Inc., Capital International Limited, Capital International Sarl, Capital International K.K., Capital Group Private Client Services, Inc., and Capital Group Investment Management Private Limited (together with CRMC, the "investment management entities"). CWI's divisions of each of the investment management entities collectively provide investment management services under the name "Capital World Investors." CWI is deemed to be the beneficial owner of 2,876,843 shares. The business address of CWI is 333 South Hope Street, 55th Floor, Los Angeles, California 90071.
- (2) Based on the Schedule 13G/A filed on February 10, 2023 by Davis Selected Advisors, L.P., which reported that as at December 31, 2022, Davis Selected Advisors, L.P. beneficially owned 3,270,744 common shares, with sole voting power over 3,270,639 shares and sole dispositive power over 3,270,744 shares. The business address of Davis Selected Advisors, L.P. is 2949 East Elvira Road, Suite 101, Tucson, Arizona 85756.
- (3) Based on the Schedule 13G filed on February 9, 2023 by FMR LLC, which reported that as at December 31, 2022, FMR LLC beneficially owned 2,720,513 common shares, with sole voting power over 2,720,498 of such shares and sole dispositive power over 2,720,513 of such shares. FMR is a parent holding company and other entities that beneficially hold the shares pursuant to their Schedule 13G include FIAM LLC, Fidelity Institutional Asset Management Trust Company, Fidelity Management & Research Company LLC, FMR Investment Management (UK) Limited, and Strategic Advisors LLC. The business address of FMR LLC is 245 Summer Street, Boston, Massachusetts 02210.
- (4) Consists of (i) 11,325 ordinary shares and (ii) 8,161 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (5) Consists of (i) 8,284 ordinary shares held directly by Mr. Burr and (ii) 904 ordinary shares held by Wells Fargo over which Mr. Burr exercises voting and dispositive control.
- (6) Consists of 97,188 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (7) Consists of (i) 12,406 ordinary shares, (ii) 603 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023, and (iii) 28,544 ordinary shares held by North Cote Limited, over which Mr. Dallas exercises voting and dispositive control.
- (8) Consists of (i) 1,714 ordinary shares and (ii) 3,768 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (9) Consists of (i) 180,659 ordinary shares held by Mr. Lynch directly and (ii) 800 ordinary shares held by a family member over which Mr. Lynch exercises voting and dispositive control.

- (10) Consists of (i) 9,189 ordinary shares and (ii) 12,818 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (11) Consists of (i) 48,585 ordinary shares and (ii) 16,468 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (12) Consists of (i) 4,541 ordinary shares and (ii) 12,925 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (13) Consists of (i) 863 ordinary shares and (ii) 1,712 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (14) Consists of 10,407 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (15) Consists of (i) 103,261 ordinary shares held jointly with his spouse and (ii) 46,699 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (16) Consists of (i) 7,956 ordinary shares and (ii) 2,894 ordinary shares underlying restricted stock units that will vest within 60 days of February 15, 2023.
- (17) Consists of 10,298 ordinary shares held jointly with his spouse.

The shareholders listed above do not have voting rights that are different from those held by any other holder of common shares of the Bank. As at January 31, 2023, approximately 84% of our common shares were held by holders and/or Custodians of record located in the United States, and there were approximately 218 holders of record of our common shares located in the United States. As at January 31, 2023, approximately 16% of our common shares were held by holders of record located in Bermuda, and there were approximately 3,767 holders of record of our common shares located in Bermuda.

B. Related Party Transactions

See "Note 26: Related party transactions" to our audited consolidated financial statements as at December 31, 2022 for information on transactions with related parties and with directors and executive officers.

Employment Agreements

The Group has entered into employment agreements with senior management. The compensation paid in 2022 to senior management under the employment agreements is described above under Item 6.B. "Compensation". The senior management employment agreements generally provide for terms and conditions of employment, including the payment of a base salary, participation in the Group's short and long-term incentive compensation programs, notice provisions, severance benefits, change in control, double-trigger equity award vesting and participation in the Group's health, welfare and retirement programs available to all senior executives. For certain members of senior management, the employment agreements also provide for executive life insurance and participation in the Group's share purchase programs.

Related-Party Transaction Policy

The Board has adopted a written policy governing the review, approval or ratification of transactions between the Bank or any of its subsidiaries and any "related party," which is a person or entity: (1) that controls, is controlled by, or is under common control with the Bank; (2) that is an associate of the Bank; (3) that is a shareholder of the Bank that has significant influence by virtue of its ownership of the Bank; (4) that is a director, executive officer or other key management person at the Bank; or (5) in which a substantial interest in its voting power is held by the persons described in (3) or (4) above. The policy calls for the related-person transactions to be reviewed and, if deemed appropriate, approved or ratified by our Corporate Governance Committee. In determining whether or not to approve or ratify a related-person transaction, our Corporate Governance Committee takes into account, among other factors it deems important, whether the related-person transaction is in our best interests and whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances. In the event that a member of our Corporate Governance Committee is not disinterested with respect to the related-person transaction under review, that member may not participate in the review, approval or ratification of that related-person transaction. Approval of the disclosure of any related party transaction included in our financial statements or any other SEC filing is the responsibility of the Audit Committee.

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

Refer to Part III, Item 17 for the Consolidated Financial Statements and Notes to the Consolidated Financial Statements

A. Consolidated Statements and Other Financial Information

Refer to Part III, Item 17 for the Consolidated Financial Statements and Notes to the Consolidated Financial Statements.

Legal Proceedings

From time to time we are a party to various litigation matters incidental to the conduct and in the ordinary course of our business.

As publicly announced, in November 2013, the US Attorney's Office for the Southern District of New York applied for and secured the issuance of so-called John Doe Summonses to six US financial institutions with which the Bank had correspondent bank relationships in connection with a US cross border tax investigation. On August 3, 2021, the Bank announced it had reached a resolution with the United States Department of Justice concerning this inquiry. The resolution is in the form of a non-prosecution agreement with a three-year term. The Bank paid \$5.6 million in respect of Forfeiture and Tax Restitution Amounts which is consistent with that previously provisioned for.

Dividend Policy

It is our intention to pay a quarterly dividend subject to the requisite approvals. There can be no assurance, however, that we will pay any dividend for any given period, and the declaration of dividends remains subject to the approval of our Board and receipt of a letter of no objection from the BMA.

Although we currently expect to pay dividends according to our dividend policy, we may elect not to pay dividends. Any declarations of dividends will be at the discretion of the Board and will be subject to the receipt of a letter of no objection from the BMA. Such dividends may be declared and paid by the Board only as permitted under applicable law. In determining the amount of any future dividends, the Board may take into account: (1) our financial results; (2) our available cash, as well as anticipated cash requirements (including debt servicing); (3) our capital requirements, including the capital requirements of our subsidiaries; (4) contractual, legal, tax and regulatory restrictions on, and implications of, the payment of dividends by us to our shareholders; (5) general economic and business conditions; (6) restrictions applicable to us and our subsidiaries under Bermuda and other applicable laws, regulations and policies, including the requirement to obtain a letter of no objection from the BMA for the payment of dividends on our common shares; and (7) any other factors that the Board may deem relevant. Therefore, there can be no assurance that we will declare or pay any dividends to holders of the common shares, or as to the amount of any such dividends. See Item 3.D "Risk Factors - Risks Relating to the Common Shares".

Our Historical Dividends

Since 2013 we have declared and paid dividends on a quarterly basis. For the year ended December 31, 2022, we declared four quarterly dividends of \$0.44 per quarter totaling \$1.76 for each common share held on record as of the applicable record dates.

The following table sets forth dividends paid per common share during the periods indicated.

	Year ended December 31		
	2022	2021	2020
(in \$, unless otherwise indicated)			
Period			
First Quarter	0.44	0.44	0.44
Second Quarter	0.44	0.44	0.44
Third Quarter	0.44	0.44	0.44
Fourth Quarter	0.44	0.44	0.44
Total dividends per common share	1.76	1.76	1.76
Total dividends per common share as a percentage of earnings per share (in %)	40.7 %	60.5 %	52.9 %

On February 13, 2023, the Board of Directors declared an interim dividend of \$0.44 per common share to be paid on March 14, 2023 to shareholders of record on February 27, 2023.

B. Significant Changes

Except as otherwise disclosed in this annual report, no significant change has occurred since December 31, 2022.

ITEM 9. THE OFFER AND LISTING

A. Offering and Listing Details

The Bank's common shares trade on the New York Stock Exchange under the symbol "NTB" and on the Bermuda Stock Exchange under the symbol "NTB.BH".

B. Plan of Distribution

Not applicable.

C. Markets

The Bank's common shares began trading on the New York Stock Exchange under the symbol "NTB" on September 21, 2016 and on the Bermuda Stock Exchange under the symbol "NTB.BH" on February 2, 1971.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Incorporation

Information can be found in the following Exhibits:

- 1.1 Amended and Restated Bye-laws of The Bank of N.T. Butterfield & Son Limited
- 1.2 The N.T. Butterfield & Son Bank Act, 1904 (incorporated by reference to Exhibit 3.2 to the registrant's registration statement on Form F-1, filed on August 4, 2016)
- 2.2 Description of Securities

C. Material Contracts

We have not entered into any material contracts outside the ordinary course of business within the last two years.

D. Exchange Controls

Refer to Item 4.B. "Business Overview - Supervision and Regulation".

E. Taxation

Bermuda Tax Considerations

Under Bermuda law, there are currently no stamp or documentary taxes, duties or similar taxes in connection with a conveyance or transfer on sale, or a conveyance or transfer to effect or having the effect of a voluntary disposition inter vivos or any agreement for the lending and borrowing of the Bank's shares which are listed on the BSX or NYSE.

We are not required by any Bermuda law or regulation to make any deductions or withholdings in Bermuda from any payment we may make in respect of the Bank's shares. However, during 2018 the Bermuda Tax Reform Commission proposed the introduction of a withholding tax on interest and dividend income, amongst other reforms. The Bermuda government has not introduced this tax as yet. In January 2021, the Bermuda Government passed the Tax Reform Commission Amendment Act 2021, which allows the Minister of Finance to appoint a further Tax Reform Commission. No subsequent appointments were made to a further Tax Reform Commission, and the Bermuda Government has stated that any substantive future tax reforms will take account of the 2018 commission's recommendations. These recommendations included a withholding tax on interest and dividend income, but it is unclear what changes will be proposed to Bermuda's system of taxation, as well as whether or not such changes will be implemented and on what terms. If additional taxes are introduced, whether in the form of withholding or otherwise, there may be an impact on holders of the Bank's shares, along with an increase in our compliance obligations.

Furthermore, Bermuda currently has no corporate or capital gains taxes.

Material US Federal Income Tax Consequences

This section describes the material US federal income tax consequences of owning and disposing of common shares of the Bank. It applies solely to US shareholders (as defined below) that hold shares as capital assets for US federal income tax purposes. This section does not describe the tax consequences arising under the Medicare contribution tax on net investment income or the alternative minimum tax or all the tax consequences that may apply to members of a special class of holders subject to special rules, including:

- a dealer in securities or foreign currencies;
- a regulated investment company;
- a trader in securities that elects to use a mark-to-market method of accounting for securities holdings;
- a tax-exempt organization;
- a bank, an insurance company, or any other financial institution;
- a person that actually or constructively owns 10% or more, by vote or value, of the Bank;
- a person that holds the Bank's common shares as part of a straddle or a hedging, conversion, or other risk reduction transaction for US federal income tax purposes;
- a person that purchases or sells common shares as part of a wash sale for tax purposes;
- an entity classified as a partnership for US federal income tax purposes; or
- a person whose functional currency is not the US Dollar.

This section is based on the Internal Revenue Code of 1986, as amended (the "IRC"), its legislative history, existing and proposed Treasury regulations, published rulings and court decisions, all as of the date hereof. These laws are subject to change, possibly on a retroactive basis.

If an entity treated as a partnership for US federal income tax purposes holds common shares, the US federal income tax treatment of a partner will generally depend on the status of the partner and the tax treatment of the partnership. A partner in an entity treated as a partnership for US federal income tax purposes holding common shares should consult its tax advisers with regard to the US federal income tax treatment of the ownership and disposition of the Bank's common shares.

Shareholders should consult their own tax advisers regarding the US federal, state, local and foreign and other tax consequences of owning and disposing of the Bank's common shares in their particular circumstances.

Special adverse US federal income tax rules apply if a US shareholder owns shares of a company that is or was treated as a PFIC for US federal income tax purposes for any taxable year during which the US shareholder held such shares. US shareholders should consult their own tax advisers as to the potential application of the PFIC rules to their ownership and disposition of the Bank's common shares.

US Shareholders

For the purposes of this discussion, a "US shareholder" is a beneficial owner of common shares that is:

- an individual that is a citizen or resident of the United States,
- a corporation, or other entity taxable as a corporation, created or organized under the laws of the United States, any state therein or the District of Columbia,
- an estate whose income is subject to US federal income tax regardless of its source, or
- a trust if a US court can exercise primary supervision over the trust's administration and one or more US persons are authorized to control all substantial decisions of the trust.

Passive Foreign Investment Company Considerations

Special adverse US federal income tax rules apply if a US shareholder holds shares of a company that is treated as a PFIC for any taxable year during which the US shareholder held such shares. This conclusion is a factual determination that is made annually and thus may be subject to change. A foreign corporation will be considered a PFIC with respect to a US shareholder for any taxable year if (i) at least 75% of its gross income for the taxable year is passive income, or (ii) at least 50% of the value, determined on the basis of a quarterly average, of its assets is attributable to assets that produce or are held for the production of passive income (the "asset test"). Passive income for this purpose generally includes dividends, interest, royalties, rents (other than certain rents and royalties derived in the active conduct of a trade or business), annuities and gains from assets that produce passive income. If a foreign corporation owns at least 25% (by value) of the shares or stock of another corporation, the foreign corporation is treated, for purposes of the PFIC tests, as owning a proportionate share of the other corporation's assets and receiving its proportionate share of the other corporation's income.

Banks generally derive a substantial part of their income from assets that are interest bearing or that otherwise could be considered passive under the PFIC rules. The IRS has issued a notice, and has proposed regulations, that exclude from passive income any income derived in the active conduct of a banking business by a qualifying foreign bank.

Based upon the proportion of our income derived from activities that are "bona fide" banking activities for US federal income tax purposes, we believe that we were not a PFIC for the taxable year ending December 31, 2022 (the latest period for which the determination can be made) and, based further on our present regulatory status under local laws, the present nature of our activities, and the present composition of our assets and sources of income, we do not expect to be a PFIC for the current year or any future years. However, PFIC status is a factual determination and there are uncertainties in the application of the relevant rules. Moreover, the IRS may issue guidance in the future with different requirements to be a qualified foreign bank, which we may not satisfy. Accordingly, there can be no assurances that we will not be a PFIC for any particular year. In addition, our current position that we are not a PFIC is based in part upon the value of our goodwill which is based on the market value for our shares. Accordingly, we could become a PFIC in the future if there is a substantial decline in the value of our shares.

If the Bank were a PFIC in any taxable year during which a US shareholder owns the Bank's common shares and the US shareholder does not make a "mark-to-market" election, as discussed below, or a special "purging" election, the Bank generally would continue to be treated as a PFIC with respect to such US shareholder in all succeeding taxable years, regardless of whether the Bank continues to meet the income or asset test discussed above. US shareholders are urged to consult their own tax advisers with respect to the tax consequences to them if the Bank were to become a PFIC for any taxable year in which they own the common shares.

If the Bank is a PFIC for any taxable year during which a US shareholder holds the common shares and the US shareholder does not make a mark-to-market election, as described below, the US shareholder will be subject to special rules with respect to:

- any gain realized on the sale or other disposition of its common shares; and
- any "excess distribution" that the Bank makes to the US shareholder (generally, any distributions to the US shareholder during a single taxable year that are greater than 125% of the average annual distributions received by the US shareholder in respect of its common shares during the three preceding taxable years or, if shorter, the portion of the US shareholder's holding period for the common shares that preceded the current taxable year).

Under these rules:

- the gain or excess distribution will be allocated ratably over the US shareholder's holding period for the common shares;
- the amount allocated to the taxable year in which the US shareholder realized the gain or excess distribution and to years before the Bank became a PFIC will be taxed as ordinary income; and
- the amount allocated to each other taxable year, with certain exceptions, will be subject to additional tax calculated by multiplying the amount allocated to such other taxable year by the highest tax rate in effect for that taxable year for individuals or corporations, as appropriate, and the interest charge generally applicable to underpayments of tax will be imposed in respect of the tax attributable to each such year.

Alternatively, if a US shareholder owns shares in a PFIC that are treated as "marketable stock," the US shareholder may make a mark-to-market election. The common shares will be treated as marketable stock if they are regularly traded on a "qualified exchange." For these purposes, the common shares will be considered regularly traded during any calendar year during which it is traded, other than in negligible quantities, on a qualified exchange, which includes the NYSE, on at least 15 days during each calendar quarter. Any trades that have as their principal purpose meeting this requirement will be disregarded.

A US shareholder that makes a mark-to-market election will not be subject to the PFIC rules described above. Instead, the US shareholder will include as ordinary income each year that the Bank is a PFIC the excess, if any, of the fair market value of its common shares at the end of the taxable year over its adjusted basis in the common shares. These amounts of ordinary income will not be eligible for the favorable tax rates applicable to qualified dividend income or long-term capital gains discussed above. The US shareholder will also be allowed to take an ordinary loss in respect of the excess, if any, of the adjusted basis of its common shares over their fair market value at the end of the taxable year that the Bank is a PFIC (but only to the extent of the net amount of income previously included as a result of the mark-to-market election). The US shareholder's basis in its common shares will be adjusted to reflect any such income or loss amounts recognized. Any gain recognized on the sale or other disposition of the common shares in a taxable year when the Bank is a PFIC will be treated as ordinary income and any loss will be treated as an ordinary loss (but only to the extent of the net amount of income previously included as a result of the mark-to-market election). Distributions paid on the common shares will be treated as discussed below under "- Taxation of Dividends".

A mark-to-market election will continue to be in effect for all taxable years in which the Bank is a PFIC and the common shares are treated as marketable stock, and may not be revoked without the consent of the IRS. If the US shareholder makes a mark-to-market election with respect to its common shares, it will be treated as having a new holding period in its common shares beginning on the first day of the first taxable year beginning after the last taxable year for which the mark-to-market election applies. The application of the mark-to-market rules to an investment in a PFIC with a subsidiary that is also a PFIC is not entirely clear; however, there is a significant risk that some or all of such an investment will be subject to the special rules described above that apply if a mark-to-market election is not made, even if a mark-to-market election is made with respect to the parent PFIC. In the event that the Bank is a PFIC, US shareholders are urged to consult their tax advisers regarding the availability of the mark-to-market election, and whether the election would be advisable in the holder's particular circumstances.

The PFIC rules outlined above would also not apply to a US shareholder if such holder were to elect to treat us as a qualified electing fund ("QEF"). An election to treat us as a QEF will not be available, however, if the Bank does not provide the information necessary to make such an election. The Bank will not provide US shareholders with the information necessary to make a QEF election, and thus, the QEF election will not be available with respect to the common shares.

Notwithstanding any election made with respect to the common shares, dividends received with respect to the common shares will not constitute "qualified dividend income" if we are a PFIC (or are treated as a PFIC with respect to the relevant US shareholder) in either the taxable year of the distribution or the preceding taxable year. Dividends that do not constitute qualified dividend income are not eligible for taxation at the reduced tax rate available to certain non-corporate holders described below in "Taxation of Dividends". Instead, such dividends would be subject to tax at ordinary income rates.

If a US shareholder owns common shares during any taxable year in which we are a PFIC, the US shareholder generally must file annual tax returns (including on Form 8621), for each taxable year that the US shareholder owns the common shares, unless its ownership satisfies a *de minimis* test.

Taxation of Dividends

Subject to the preceding discussion under the heading "— Passive Foreign Investment Company Considerations" above, a US shareholder must include in its gross income as dividends the gross amount of any distribution paid by the Bank to the extent that it is paid out of the Bank's current or accumulated earnings and profits as determined for US federal income tax purposes. Distributions in excess of current and accumulated earnings and profits, as determined for US federal income tax purposes, will be treated as a non-taxable return of capital to the extent of the US shareholder's basis in the common shares of the Bank, causing a reduction in the US shareholder's adjusted basis in such common shares, and thereafter as a capital gain. Because the Bank does not maintain calculations of its earnings and profits under US federal income tax principles, it is expected that distributions generally will be reported to US shareholders as dividends.

Dividends paid to certain non-corporate US shareholders by a "qualified foreign corporation" that constitute qualified dividend income are taxable to the shareholder at the preferential rates applicable to long-term capital gains provided that the shareholder holds the shares for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meets other holding period requirements. For this purpose, common shares of the Bank will be treated as stock of a "qualified foreign corporation" if the Bank was not a PFIC for the taxable year in which the dividend was paid, or the preceding taxable year and if such common shares are listed on an established securities market in the United States, such as the NYSE. The common shares of the Bank are listed on the NYSE. Accordingly, subject to the preceding discussion under the heading "— Passive Foreign Investment Company Considerations", dividends the Bank pays with respect to the common shares will constitute qualified dividend income, assuming the holding period requirements are met.

The dividend will not be eligible for the dividends-received deduction allowed to US corporations in respect of dividends received from other US corporations.

Dividends generally will be treated as foreign source income for US foreign tax credit purposes. Under Section 904(h) of the IRC, however, dividends paid by a foreign corporation that is treated as 50% or more owned, by vote or value, by US persons for US federal income tax purposes may be treated as US source income (rather than foreign source income) for foreign tax credit purposes, to the extent the foreign corporation earns US source income. In general, therefore, the application of Section 904(h) of the IRC may adversely affect a US shareholder's ability to use foreign tax credits. As a result of the listing of the common shares of the Bank on the NYSE, the Bank may be treated as 50% or more owned by US persons for purposes of Section 904(h) of the IRC. US shareholders are strongly urged to consult their own tax advisers regarding the possible impact if Section 904(h) of the IRC should apply.

Taxation of Capital Gains

Subject to the preceding discussion under the heading "— Passive Foreign Investment Company Considerations", a US shareholder that sells or otherwise disposes of common shares of the Bank will recognize a capital gain or loss for US federal income tax purposes equal to the difference between the amount that the US shareholder realizes and the US shareholder's tax basis in those common shares. The capital gain of a non-corporate US shareholder is generally taxed at preferential rates where the property is held for more than one year. The gain or loss will be US source income or loss for foreign tax credit limitation purposes. The deduction of capital losses is subject to limitations.

F. Dividends and Paying Agents

Not applicable.

G. Statements by Experts

Not applicable.

H. Documents on Display

As an FPI, we are also exempt from the requirements of Regulation FD (Fair Disclosure) which, generally, are meant to ensure that select groups of investors are not privy to specific information about an issuer before other investors. We are, however, still subject to the anti-fraud and anti-manipulation rules of the SEC, such as Rule 10b-5 under the Securities Act. Since many of the disclosure obligations required of us as an FPI are different than those required by other United States domestic reporting companies, the Bank's shareholders, potential shareholders and the investing public in general should not expect to receive information about us in the same amount, and at the same time, as information is received from, or provided by, other United States domestic reporting companies. We are liable for violations of the rules and regulations of the SEC which do apply to us as an FPI, see "Implications of Being a Foreign Private Issuer".

The SEC maintains an internet site at <https://www.sec.gov> that contains reports and other information regarding issuers that file electronically with the SEC. These SEC filings are also available to the public from commercial document retrieval services.

I. Subsidiary Information

Not applicable.

J. Annual Report to Security Holders

The Bank is not required to provide an annual report to security holders in response to the requirements of Form 6-K.

K. Shareholder Information & Directory

DIRECTORS' AND EXECUTIVE OFFICERS' SHARE INTERESTS AND DIRECTORS' SERVICE CONTRACTS

In accordance with Regulation 6.8(3) of Section IIA of the Bermuda Stock Exchange Listing Regulations, the total interests in common shares of the Bank held by all Directors and Executive Officers as listed in Item 6.A. "Directors and Senior Management" are noted in Item 7.A. "Major Shareholders". For information on equity compensation for Directors and Executive Officers, please see Item 6.B. "Compensation".

Save for those arrangements described in Note 26 to the Bank's December 31, 2022 consolidated financial statements, there are no contracts of significance subsisting during or at the end of the financial year ended December 31, 2022 in which a Director of the Bank is or was materially interested, either directly or indirectly.

WRITTEN NOTICE OF SHARE REPURCHASE PROGRAM — BSX REGULATION 6.38

On February 13, 2023, the Board approved, with effect from March 1, 2023 through to February 29, 2024, a common share repurchase program, authorizing the purchase for treasury of up to 3.0 million common shares.

The repurchase of shares pursuant to the repurchase program was confirmed by way of non-objection from the Bermuda Monetary Authority. The timing and amount of repurchase transactions will be based on market conditions, share price, legal requirements and other factors. No assurances can be given as to the amount of common shares that may actually be repurchased.

Under the Bank's share repurchase programs, the total shares acquired or purchased for cancellation during the year ended December 31, 2022 amounted to 102,000 common shares to be held as treasury shares or cancelled.

From time to time, the Bank's associates, insiders and insiders' associates as defined by the BSX regulations may sell shares, which may result in such shares being repurchased pursuant to the program, but under BSX regulations, such trades must not be pre-arranged and all repurchases must be made in the open market. Prices paid by the Bank must not, according to BSX regulations, be higher than the last independent trade for a "round lot" defined as 100 shares or more.

The Bank will advise the BSX monthly of the number of shares repurchased by the Bank.

LARGE SHAREHOLDERS

See Item 7.A. "Major Shareholders" for a listing of registered holders of 5% or more of the issued share capital as at February 15, 2023.

EXCHANGE LISTING

The Bank's shares are listed on the following stock exchanges:

BERMUDA STOCK EXCHANGE

110 Pitts Bay Road
4th Floor
Pembroke, HM 08
Bermuda Tel: (441) 292 7212
Fax: (441) 292 7619
www.bsx.com

NEW YORK STOCK EXCHANGE

11 Wall Street
New York, NY 10005
United States of America
Tel: (212) 656 3000
www.nyse.com

SHARE DEALING SERVICE

Butterfield Securities (Bermuda) Limited
65 Front Street
Hamilton, HM 12
Bermuda
Tel: (441) 299 3972
Fax: (441) 292 9947
E-mail: info@butterfieldgroup.com

REGISTRAR AND TRANSFER AGENT

For Bermuda-registered securities:
MUFG Fund Services (Bermuda) Limited
4th Floor North, Cedar House
41 Cedar Avenue
Hamilton, HM 12
Bermuda
Tel: (441) 295 1355
Fax: (441) 295 6759
E-mail: bntbshareholders2@mfsadmin.com

For US-registered securities:

Computershare
462 South 4th Street
Suite 1600
Louisville, KY 40202
United States of America
Tel: (800) 736 3001
(781) 575 3100

MEDIA RELATIONS / PUBLICATION REQUESTS

Nicky Stevens
Group Strategic Marketing & External Communications
Tel: (441) 299 1624
E-mail: nicky.stevens@butterfieldgroup.com

INVESTOR RELATIONS

Noah Fields
Head of Investor Relations
Tel: (441) 299 3816
E-mail: noah.fields@butterfieldgroup.com

DIRECTORY

PRINCIPAL OFFICES & SUBSIDIARIES

This list does not include all companies in the Group.

The Bank of N.T. Butterfield & Son Limited
Group Parent Company, Community Banking, Corporate Banking, Private Banking, Credit and Treasury Services, Custody

Head Office

65 Front Street
Hamilton, HM 12
Bermuda
Tel: (441) 295 1111
Fax: (441) 292 4365
E-mail: info@butterfieldgroup.com

Mailing Address:

P.O. Box HM 195
Hamilton, HM AX
Bermuda

BERMUDA

Managing Director: Michael Neff

Butterfield Asset Management Limited

Asset Management
Head of Global Asset Management:
Dwayne Outerbridge
65 Front Street
Hamilton, HM 12
Bermuda
Tel: (441) 299 3817
Fax: (441) 292 9947
E-mail: info@butterfieldgroup.com

Butterfield Securities (Bermuda) Limited

Brokerage Services
65 Front Street
Hamilton, HM 12
Bermuda
Tel: (441) 299 3972
Fax: (441) 292 9947
E-mail: info@butterfieldgroup.com

Bermuda Trust Company Limited Butterfield Trust (Bermuda) Limited Grosvenor Trust Company Limited

Trust and Fiduciary Services
Managing Director: John Richmond
Rosebank Centre
11 Bermudiana Road
Hamilton, HM 08 Bermuda
Tel: (441) 299 3980
Fax: (441) 292 1258
E-mail: info@butterfieldgroup.com

THE BAHAMAS

Butterfield Trust (Bahamas) Limited
Trust and Fiduciary Services
Managing Director: Craig Barley
3rd Floor, Montague Sterling Centre
East Bay Street
P.O. Box N-3242
Nassau, N.P.
The Bahamas
Tel: (242) 393 8622
Fax: (242) 393 3772
E-mail: bahamas@butterfieldgroup.com

CAYMAN ISLANDS

Butterfield Bank (Cayman) Limited
Community Banking, Corporate Banking, Private Banking, Asset Management, Credit and Treasury Services, Custody
Managing Director: Michael McWatt
Butterfield Place
12 Albert Panton Street
P.O. Box 705
Grand Cayman KY1-1107
Cayman Islands
Tel: (345) 949 7055
Fax: (345) 949 7004
E-mail: info.cayman@butterfieldgroup.com

Butterfield Trust (Cayman) Limited

Trust and Fiduciary Services
Managing Director: Andrew Leggatt
68 Fort Street
P.O. Box 705
Grand Cayman KY1-1107
Cayman Islands
Tel: (345) 949 7055
Fax: (345) 949 7004
E-mail: trust.cayman@butterfieldgroup.com

GUERNSEY

Butterfield Bank (Guernsey) Limited
Community Banking, Corporate and Intermediary Banking, Private Banking, Credit and Treasury Services, Custody
Managing Director: Alan Bain
P.O. Box 25
Regency Court
Gategny Esplanade
St. Peter Port
Guernsey GY1 3AP
Channel Islands
Tel: (44) 1481 711 521
Fax: (44) 1481 714 533
E-mail: guernsey@butterfieldgroup.com

Butterfield Trust (Guernsey) Limited

Trust and Fiduciary Services
Managing Director: Lindsay Ozanne
P.O. Box 25
Regency Court
Gategny Esplanade
St Peter Port
Guernsey GY1 3AP
Channel Islands
Tel: (44) 1481 711 521
Fax: (44) 1481 728 665
E-mail: guernsey@butterfieldgroup.com

JERSEY

Butterfield Bank (Jersey) Limited
Community Banking, Corporate and Intermediary Banking, Private Banking, Credit and Treasury Services, Custody
Managing Director: Richard Saunders
P.O. Box 250
St. Paul's Gate
New Street St. Helier Jersey JE4 5PU Channel Islands
Tel: (44) 1534 843 333 Fax: (44) 1534 843 334
E-mail: jersey@butterfieldgroup.com

SINGAPORE

Butterfield Trust (Asia) Limited
Trust and Fiduciary Services
Managing Director: Mark Florance
#14 02-04
6 Battery Road
Singapore 049909
Tel: (65) 6916 3636
E-mail: singapore@butterfieldgroup.com

SWITZERLAND

Butterfield Trust (Switzerland) Limited
Trust and Fiduciary Services
Managing Director: Jim Parker
Boulevard des Tranchées 16
1206 Geneva
Switzerland
Tel: (41) 22 839 0000
Fax: (41) 22 839 0099
E-mail: switzerland@butterfieldgroup.com

UNITED KINGDOM

Butterfield Mortgages Limited
UK Residential Property Lending
Chief Executive Officer: Alpa Bhakta
Sun Court 6
6-67 Cornhill
London EC3V 3NB
United Kingdom
Tel: (44) 020 3871 6900
Fax: (44) 020 3871 6901
E-mail: ukmortgages@butterfieldgroup.com

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Refer to Risk Management discussion in Item 5.A. "Operating Results".

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not applicable.

PART II

ITEM 13. DEFAULTS, DIVIDENDS ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

Not applicable.

ITEM 15. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, Butterfield carried out an evaluation, under the supervision and with the participation of Butterfield's management, including our Chairman & Chief Executive Officer and Group Chief Financial Officer, of the effectiveness of the design and operation of Butterfield's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act), to ensure that information required to be disclosed by Butterfield in reports that it files or submits under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to Butterfield's management, including its Chairman & Chief Executive Officer and Group Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. Based upon that evaluation, Butterfield's Chairman & Chief Executive Officer and Group Chief Financial Officer concluded that the design and operation of these disclosure controls and procedures were effective, in all material respects, as of the end of the period covered by this report.

Reports Regarding Internal Controls

Management's Annual Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm are included on pages F-2 and F-3, respectively.

ITEM 16. [RESERVED]

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Refer to Item 6.A. "Directors and Senior Management".

ITEM 16B. CODE OF ETHICS

Code of Conduct and Ethics and Whistleblower Policy

The Board has adopted a Group Code of Conduct and Ethics (the "Code") based upon recommended principles of corporate governance. The Code sets out the guidelines and procedures for establishing a high standard of ethical conduct, accountability and transparency to which all of our employees are expected to comply and which are consistent with our high standards of ethics and core values. The Board, in conjunction with the Corporate Governance Committee, is responsible for administering the Code. The Code is available on our website at www.butterfieldgroup.com.

The Board has adopted a Whistleblower Policy which augments the Code. The policy is designed to serve as a tool to assist employees who believe they have or may have discovered illegal, unethical, or questionable practices to communicate their concerns confidentially and without fear of reprisals. It is also designed to protect the integrity of the Bank's financial reporting and its business dealings.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth for the fiscal years indicated the fees charged by our principal accountant and its associated entities for various services provided during those periods:

In millions of \$ Type of Services	Fiscal Year Ended		Description of Service
	December 31, 2022	December 31, 2021	
Audit services	5.4	5.3	(1)
Audit-related services	0.2	0.2	(1)
Other services	0.1	0.1	(2)
Total	5.7	5.6	

(1) Professional services rendered for the audit and review of the consolidated financial statements of The Bank of N.T. Butterfield & Son Limited and statutory audits of the financial statements of The Bank of N.T. Butterfield & Son Limited and its subsidiaries, compliance with local regulations, review of documents filed with the BMA and the SEC (including services provided by independent experts to the audit firms in connection with the audit).

(2) The non-audit services required during the years disclosed above were subject to the Audit Committee's pre-approval process pursuant to paragraph (c) (7)(i)(C) of Rule 2-01 of Regulation S-X.

Pre-approval Procedures

To help ensure PwC's independence, all services provided by PwC have to be pre-approved by the Audit Committee. A pre-approval may be granted either for a specific mandate or in the form of a blanket pre-approval authorizing a limited and well-defined type and amount of services. The Audit Committee reviews and approves a list of blanket pre-approvals annually.

The Audit Committee has delegated pre-approval authority to its Chairman up to a maximum of \$500,000 for any engagement, and the Group Chief Financial Officer submits all proposals for services by PwC to the Chairman of the Audit Committee, unless there is a blanket pre-approval in place. The Audit Committee is informed of the approvals granted by its Chairman on a quarterly basis.

ITEM 16D. EXEMPTION FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASES

The below details purchases made by or on behalf of the issuer or any "affiliated purchaser," as defined in §240.10b-18(a)(3), of shares or other units of any class of the issuer's equity securities that are registered by the issuer pursuant to section 12 of the Exchange Act (15 U.S.C. 78l) during the year ended December 31, 2022.

From time to time, the Bank, may seek to repurchase and retire equity securities of the Bank, through cash purchase, privately negotiated transactions, or otherwise. Such transactions, if any, depend on prevailing market conditions, our liquidity and capital requirements, contractual restrictions, and other factors. The amounts involved may be material.

On February 10, 2021, the Board approved a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through to February 2022.

On February 14, 2022, the Board approved a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through to February 28, 2023.

On February 13, 2023, the Board approved a new common share repurchase program, authorizing the purchase of up to 3.0 million common shares through to February 29, 2024.

In the year ended December 31, 2022, the Bank retired 102,000 shares which were previously held as treasury shares as a result of these repurchases.

The following table summarizes our repurchases of our common shares during the year ended December 31, 2022.

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of a publicly announced program	Maximum number of shares that may yet be purchased under the program
January 1, 2022	—	—	—	1,465,172
January 1 to 31, 2022	40,000	38.76	40,000	1,425,172
February 1 to 28, 2022	38,000	38.77	78,000	1,387,172
March 1, 2022	—	—	—	2,000,000
March 1 to 16, 2022	24,000	36.28	102,000	1,976,000

ITEM 16F. CHANGES IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

The listing rules of the NYSE include certain accommodations with respect to corporate governance requirements that allow FPIs, such as us, to follow "home country" corporate governance practices in lieu of otherwise applicable NYSE corporate governance standards for listed US companies. However, FPIs are required to have an audit committee that satisfies certain of the NYSE standards, including the requirements of the SEC's Rule 10A-3. Our Audit Committee satisfies such requirements. The NYSE also requires an FPI to provide certain written affirmations and notices to the NYSE.

SEC rules require FPIs to disclose the significant ways in which their corporate governance practices differ from NYSE listing standards. A description of how our corporate governance practices compare to NYSE listing standards is set forth below:

- *A Majority of Independent Directors.* The NYSE requires the majority of the board of directors of a listed US company to be independent directors pursuant to applicable NYSE standards. As required by our Corporate Governance Guidelines, a majority of our Board is independent according to the NYSE's standards.
- *A Nominating/Corporate Governance Committee.* The NYSE requires a listed US company to have a nominating/corporate governance committee consisting of independent directors as well as a written charter specifying the purpose and responsibilities of the committee. We currently have a Corporate Governance Committee, and the composition of this committee and its written charter are determined pursuant to the NYSE standards. A copy of the charter is available on our website at www.butterfieldgroup.com.
- *A Compensation Committee.* The NYSE requires a listed US company to have a compensation committee consisting of independent directors that also meet additional independence requirements as set forth in the NYSE rules as well as a committee charter specifying the purpose and responsibilities of the

committee. We currently have a Compensation & Human Resources Committee, and the composition of this committee and its written charter are determined pursuant to the NYSE standards. A copy of the charter is available on our website at www.butterfieldgroup.com.

- *Executive Sessions.* The NYSE requires that non-management directors meet regularly in executive sessions without management. The NYSE also requires that all independent directors meet in an executive session at least once a year. Our non-management directors meet regularly in executive sessions without management present. In 2022, the Board held five executive sessions with only our independent directors present.
- *Company Policies.* The NYSE requires a listed US company to adopt and disclose a code of business conduct and corporate governance guidelines that address certain governance standards. As noted above, the Board has adopted the Code. In addition, the Board has adopted Corporate Governance Guidelines that address Board composition and qualifications, director responsibilities, director access to management, director orientation and continuing education, succession planning and management development and Board assessments. The Code and the Corporate Governance Guidelines are available on our website at www.butterfieldgroup.com.
- *Shareholder Approval of Equity Compensation Plans.* The NYSE requires a listed US company to receive shareholder approval of any equity compensation plans. The Bank does not submit its equity compensation plans to shareholders for approval.

We believe that our established corporate governance practice satisfies the NYSE listing standards applicable to FPIs. If at any time we cease to be a "foreign private issuer" under the rules of the NYSE and no other exemptions apply, or if we otherwise so elect, the Board will take any additional actions necessary to comply with NYSE corporate governance rules applicable to listed US companies, subject to a permitted "phase-in" period.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16I. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

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Management's Annual Report on Internal Control over Financial Reporting

Management of The Bank of N.T. Butterfield & Son Limited ("Butterfield" or the "Bank") is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the Bank's principal executive and principal financial officers, or persons performing similar functions, and effected by Butterfield's Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Butterfield's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records, that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Bank's assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Bank are being made only in accordance with authorizations of Butterfield's management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Bank's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management has completed an assessment of the effectiveness of Butterfield's internal control over financial reporting as at December 31, 2022. In making the assessment, management used the "Internal Control - Integrated Framework (2013)" promulgated by the Committee of Sponsoring Organizations of the Treadway Commission.

Based upon the assessment performed, management concluded that as at December 31, 2022, Butterfield's internal control over financial reporting was effective. There have been no changes in Butterfield's internal control over financial reporting that occurred during the period covered by this report which have materially affected or are reasonably likely to materially affect Butterfield's internal control over financial reporting.

The Bank's internal control over financial reporting as at December 31, 2022, has been audited by PricewaterhouseCoopers Ltd., an independent registered public accounting firm, as stated in their report on page F-3 of this annual report.

/s/ Michael Collins

Michael Collins

Chairman & Chief Executive Officer

/s/ Craig Bridgewater

Craig Bridgewater

Group Chief Financial Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
The Bank of N.T. Butterfield & Son Limited

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of The Bank of N.T. Butterfield & Son Limited and its subsidiaries (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of operations, comprehensive income, changes in shareholders’ equity and cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for credit losses on certain financial instruments in 2020.

Basis for Opinions

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable

assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Allowance for Credit Losses

As described in Notes 2 and 6 to the consolidated financial statements, management assesses the adequacy of the allowance for credit losses based on evaluations of the loan portfolio utilizing quantitative and qualitative criteria. At December 31, 2022, the allowance for credit losses was \$25.0 million on total loans retained of \$5.1 billion. As described by management, the allowance is management's estimate of credit losses expected in its lending arrangements based upon a current expected credit loss ("CECL") model. The quantitative criteria used in the model primarily includes the Company's internal risk rating framework and historical credit loss experience, relevant available information relating to past events and current conditions, and specific allowances for impaired loans. Management subjectively assesses the adequacy of the total allowance for credit losses and the need for adjustments to the quantitative model estimate, with consideration given to qualitative assumptions such as changes in underwriting practices, vintage, portfolio mix, delinquency level and term as well as changes in environmental conditions such as changes in macroeconomic factors and collateral values not adequately included in the quantitative model estimate.

The principal considerations for our determination that performing procedures relating to the qualitative assessment of the allowance for credit losses is a critical audit matter are (i) the significant judgment by management in determining the assumptions used in the qualitative assessment, which in turn led to a high degree of auditor judgment in performing procedures relating to the significant assumptions used in management's qualitative assessment; and (ii) significant audit effort in evaluating audit evidence relating to management's assumptions used in the estimation process.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Company's estimation process for the allowance for credit losses, which included controls over the assumptions used within management's qualitative assessment. These procedures also included, among others, testing management's process for determining the allowance for credit losses by evaluating the appropriateness of the methodology and models, testing the data used in the estimate and evaluating the reasonableness of the significant assumptions used in management's qualitative assessment. Evaluating the assumptions used in the model involved evaluating (i) the reasonableness of the impact of the external macroeconomic and high interest rate environment and events that have occurred but may not yet otherwise be reflected in the quantitative model estimate for the allowance for credit losses; and (ii) the consistency with external market and industry data and consistency with evidence obtained in other areas of the audit.

/s/PricewaterhouseCoopers Ltd.
Hamilton, Bermuda
February 22, 2023

We have served as the Company's auditor since 1961.

The Bank of N.T. Butterfield & Son Limited
Consolidated Balance Sheets
(In thousands of US dollars, except share and per share data)

	As at	
	December 31, 2022	December 31, 2021
Assets		
Cash and demand deposits with banks - Non-interest bearing	93,032	115,651
Demand deposits with banks - Interest bearing	258,239	437,644
Cash equivalents - Interest bearing	1,749,516	1,626,538
Cash and cash equivalents	2,100,787	2,179,833
Securities purchased under agreements to resell	59,871	96,107
Short-term investments	884,478	1,198,918
Investment in securities		
Equity securities at fair value	236	222
Available-for-sale at fair value (amortized cost: \$2,209,078 (2021: \$3,495,564))	1,988,865	3,473,730
Held-to-maturity (fair value: \$3,197,508 (2021: \$2,786,112))	3,738,080	2,763,344
Total investment in securities	5,727,181	6,237,296
Loans		
Loans	5,121,391	5,268,743
Allowance for credit losses	(24,961)	(28,073)
Loans, net of allowance for credit losses	5,096,430	5,240,670
Premises, equipment and computer software, net	146,141	138,686
Goodwill	22,892	25,356
Other intangible assets, net	51,478	60,750
Equity method investments	12,484	12,614
Other real estate owned, net	800	691
Accrued interest and other assets	203,520	144,279
Total assets	14,306,062	15,335,200
Liabilities		
Deposits		
Non-interest bearing	3,039,701	2,820,609
Interest bearing	9,951,375	11,049,614
Total deposits	12,991,076	13,870,223
Employee benefit plans	92,018	126,230
Accrued interest and other liabilities	185,864	189,378
Total other liabilities	277,882	315,608
Long-term debt	172,289	171,876
Total liabilities	13,441,247	14,357,707
Commitments, contingencies and guarantees (Note 12)		
Shareholders' equity		
Common share capital (BMD 0.01 par; authorized voting ordinary shares 2,000,000,000 and non-voting ordinary shares 6,000,000,000) issued and outstanding: 50,277,466 (2021: 49,911,351)	503	499
Additional paid-in capital	1,032,632	1,017,640
Retained earnings (Accumulated deficit)	229,732	104,329
Less: treasury common shares, at cost: 619,212 (2021: 619,212)	(20,600)	(20,058)
Accumulated other comprehensive income (loss)	(377,452)	(124,917)
Total shareholders' equity	864,815	977,493
Total liabilities and shareholders' equity	14,306,062	15,335,200

The accompanying notes are an integral part of these consolidated financial statements.

/s/ Michael Collins
Michael Collins
Chairman of the Board

The Bank of N.T. Butterfield & Son Limited
Consolidated Statements of Operations
(In thousands of US dollars, except per share data)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Non-interest income			
Asset management	29,727	29,853	29,225
Banking	57,120	51,920	47,346
Foreign exchange revenue	47,831	43,434	37,180
Trust	52,312	52,873	50,653
Custody and other administration services	13,626	15,232	13,845
Other non-interest income	5,971	4,795	5,610
Total non-interest income	206,587	198,107	183,859
Interest income			
Interest and fees on loans	249,390	221,544	230,656
<i>Investments (none of the investment securities are intrinsically tax-exempt)</i>			
Available-for-sale	38,939	48,422	50,621
Held-to-maturity	76,853	53,488	58,607
Deposits with banks and other	33,201	1,444	12,125
Total interest income	398,383	324,898	352,009
Interest expense			
Deposits	45,176	15,490	25,116
Long-term debt	9,601	9,601	9,294
Securities sold under agreement to repurchase	22	—	—
Total interest expense	54,799	25,091	34,410
Net interest income before provision for credit losses	343,584	299,807	317,599
Provision for credit (losses) recoveries	(2,396)	3,128	(8,491)
Net interest income after provision for credit losses	341,188	302,935	309,108
Net gains (losses) on equity securities	14	85	658
Net realized gains (losses) on available-for-sale investments	(19)	(239)	1,220
Net gains (losses) on other real estate owned	448	(53)	(104)
Net other gains (losses)	1,079	(1,154)	(552)
Total other gains (losses)	1,522	(1,361)	1,222
Total net revenue	549,297	499,681	494,189
Non-interest expense			
Salaries and other employee benefits	166,189	161,317	173,662
Technology and communications	56,740	63,843	65,156
Professional and outside services	19,640	21,400	21,263
Property	31,442	30,862	29,392
Indirect taxes	21,982	22,091	21,323
Non-service employee benefits expense	3,775	3,888	2,640
Marketing	6,357	4,561	4,443
Amortization of intangible assets	5,680	6,011	5,819
Other expenses	19,790	19,917	20,896
Total non-interest expense	331,595	333,890	344,594
Net income before income taxes	217,702	165,791	149,595
Income tax benefit (expense)	(3,682)	(3,123)	(2,378)
Net income	214,020	162,668	147,217
Earnings per common share			
Basic earnings per share	4.32	3.28	2.91
Diluted earnings per share	4.29	3.26	2.90

The accompanying notes are an integral part of these consolidated financial statements.

The Bank of N.T. Butterfield & Son Limited
Consolidated Statements of Comprehensive Income
(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Net income	214,020	162,668	147,217
Other comprehensive income (loss), net of taxes			
Unrealized net gains (losses) on translation of net investment in foreign operations	(4,787)	152	(247)
Net changes on investments transferred to held-to-maturity	(91,303)	151	665
Unrealized net gains (losses) on available-for-sale investments	(198,363)	(94,761)	60,971
Employee benefit plans adjustments	41,918	19,221	(23,972)
Other comprehensive income (loss), net of taxes	(252,535)	(75,237)	37,417
Total comprehensive income (loss)	(38,515)	87,431	184,634

The accompanying notes are an integral part of these consolidated financial statements.

The Bank of N.T. Butterfield & Son Limited
Consolidated Statements of Changes in Shareholders' Equity

	Year ended					
	December 31, 2022		December 31, 2021		December 31, 2020	
	Number of shares	In thousands of US dollars	Number of shares	In thousands of US dollars	Number of shares	In thousands of US dollars
Common share capital issued and outstanding						
Balance at beginning of year	49,911,351	499	50,010,948	500	53,005,177	530
Retirement of shares	(102,000)	(1)	(534,828)	(5)	(3,452,000)	(35)
Issuance of common shares	468,115	5	435,231	4	457,771	5
Balance at end of year	50,277,466	503	49,911,351	499	50,010,948	500
Additional paid-in capital						
Balance at beginning of year		1,017,640		1,013,326		1,081,569
Share-based compensation		16,441		14,539		14,608
Share-based settlements		636		612		637
Retirement of shares		(2,080)		(10,834)		(85,222)
Issuance of common shares, net of underwriting discounts and commissions		(5)		(3)		1,734
Balance at end of year		1,032,632		1,017,640		1,013,326
Retained earnings (Accumulated deficit)						
Balance at beginning of year		104,329		33,918		(9,237)
Cumulative effect from change in accounting policy (Note 2)		—		—		(7,841)
Net Income for the year		214,020		162,668		147,217
Common share cash dividends declared and paid, 1.76 per share (2021: \$1.76 per share)		(87,343)		(87,285)		(88,932)
Retirement of shares		(1,274)		(4,972)		(7,289)
Balance at end of year		229,732		104,329		33,918
Treasury common shares						
Balance at beginning of year	619,212	(20,058)	619,212	(16,116)	619,212	(22,022)
Purchase of treasury common shares	102,000	(3,897)	534,828	(19,754)	3,452,000	(86,640)
Retirement of shares	(102,000)	3,355	(534,828)	15,812	(3,452,000)	92,546
Balance at end of year	619,212	(20,600)	619,212	(20,058)	619,212	(16,116)
Accumulated other comprehensive income (loss)						
Balance at beginning of year		(124,917)		(49,680)		(87,097)
Other comprehensive income (loss), net of taxes		(252,535)		(75,237)		37,417
Balance at end of year		(377,452)		(124,917)		(49,680)
Total shareholders' equity		864,815		977,493		981,948

The accompanying notes are an integral part of these consolidated financial statements.

The Bank of N.T. Butterfield & Son Limited
Consolidated Statements of Cash Flows
(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Cash flows from operating activities			
Net income	214,020	162,668	147,217
Adjustments to reconcile net income to operating cash flows			
Depreciation and amortization	40,177	69,456	62,435
Provision for credit losses (recoveries)	2,396	(3,128)	8,491
Share-based payments and settlements	17,077	15,151	15,245
Net change in equity securities at fair value	(14)	7,096	102
Net realized (gains) losses on available-for-sale investments	19	239	(1,220)
Net (gains) losses on other real estate owned	(448)	53	104
(Increase) decrease in carrying value of equity method investments	(39)	(123)	(1,298)
Dividends received from equity method investments	169	442	2,845
Changes in operating assets and liabilities			
(Increase) decrease in accrued interest receivable and other assets	(54,021)	13,295	(8,143)
Increase (decrease) in employee benefit plans, accrued interest payable and other liabilities	(65)	(13,800)	(37,628)
Cash provided by (used in) operating activities	219,271	251,349	188,150
Cash flows from investing activities			
(Increase) decrease in securities purchased under agreements to resell	36,236	100,932	(54,756)
Short-term investments other than restricted cash: proceeds from maturities and sales	2,745,132	2,365,631	2,214,870
Short-term investments other than restricted cash: purchases	(2,548,734)	(2,748,942)	(1,815,887)
Available-for-sale investments: proceeds from sale	7,631	189,417	352,965
Available-for-sale investments: proceeds from maturities and pay downs	230,718	650,347	565,028
Available-for-sale investments: purchases	(83,900)	(1,771,776)	(1,313,884)
Held-to-maturity investments: proceeds from maturities and pay downs	403,424	652,359	538,345
Held-to-maturity investments: purchases	(383,332)	(1,233,329)	(533,379)
Net (increase) decrease in loans	(90,185)	(99,007)	25,555
Additions to premises, equipment and computer software	(26,876)	(15,724)	(20,566)
Proceeds from sale of other real estate owned	1,909	4,430	—
Cash provided by (used in) investing activities	292,023	(1,905,662)	(41,709)

The Bank of N.T. Butterfield & Son Limited
Consolidated Statements of Cash Flows
(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Cash flows from financing activities			
Net increase (decrease) in deposits	(415,566)	642,815	692,635
Issuance of subordinated capital, net of underwriting fees	—	—	97,647
Repayment of long-term debt	—	—	(70,000)
Common shares repurchased	(3,897)	(19,754)	(86,640)
Proceeds from stock option exercises	—	—	1,739
Cash dividends paid on common shares	(87,343)	(87,285)	(88,932)
Cash provided by (used in) financing activities	(506,806)	535,776	546,449
Net effect of exchange rates on cash, cash equivalents and restricted cash	(91,439)	7,536	42,707
Net increase (decrease) in cash, cash equivalents and restricted cash	(86,951)	(1,111,001)	735,597
Cash, cash equivalents and restricted cash: beginning of year	2,203,497	3,314,498	2,578,901
Cash, cash equivalents and restricted cash: end of year	2,116,546	2,203,497	3,314,498
Components of cash, cash equivalents and restricted cash at end of year			
Cash and cash equivalents	2,100,787	2,179,833	3,289,592
Restricted cash included in short-term investments on the consolidated balance sheets	15,759	23,664	24,906
Total cash, cash equivalents and restricted cash at end of year	2,116,546	2,203,497	3,314,498
Supplemental disclosure of cash flow information			
Cash interest paid	48,643	24,464	39,125
Cash income taxes paid	4,818	463	5,052
Supplemental disclosure of non-cash items			
Transfer to (out of) other real estate owned	1,603	704	314
Transfer of available-for-sale investments to held-to-maturity investments	998,157	—	—
Initial recognition of right-of-use assets and operating lease liabilities	3,476	1,575	323
Reduction in net loans due to initial adoption of a current expected credit loss model	—	—	7,841

The accompanying notes are an integral part of these consolidated financial statements.

Note 1: Nature of business

The Bank of N.T. Butterfield & Son Limited ("Butterfield", the "Bank" or the "Company") is incorporated under the laws of Bermuda and has a banking license under the Banks and Deposit Companies Act, 1999 ("the Act"). Butterfield is regulated by the Bermuda Monetary Authority ("BMA"), which operates in accordance with Basel principles.

Butterfield is a full service bank and wealth manager headquartered in Hamilton, Bermuda. The Bank operates its business through three geographic segments: Bermuda, the Cayman Islands, and the Channel Islands and the United Kingdom ("UK"), where its principal banking operations are located and where it offers specialized financial services. Butterfield offers banking services, comprised of retail and corporate banking, and wealth management, which consists of trust, private banking, and asset management. In the Bermuda and Cayman Islands segments, Butterfield offers both banking and wealth management. In the Channel Islands and the UK segment, the Bank offers wealth management and residential property lending. Butterfield also has operations in the jurisdictions of The Bahamas, Canada, Mauritius, Singapore and Switzerland, which are included in our Other segment.

The Bank's common shares trade on the New York Stock Exchange under the symbol "NTB" and on the Bermuda Stock Exchange ("BSX") under the symbol "NTB.BH".

Note 2: Significant accounting policies

The Bank's reporting currency is United States ("US") dollars and the functional currency is Bermuda ("BMD") dollars. Assets, liabilities, revenues and expenses denominated in Bermuda dollars are translated to US dollars at par.

A. Basis of Presentation and Use of Estimates and Assumptions

The accounting and financial reporting policies of the Bank and its subsidiaries conform to generally accepted accounting principles in the United States of America ("GAAP"). The preparation of consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the year, and actual results could differ from those estimates.

Critical accounting estimates are those that require management to make subjective or complex judgments about the effect of matters that are inherently uncertain and may change in subsequent periods. Changes that may be required in the underlying assumptions or estimates in these areas could have a material impact on the future financial condition and results of operations. Management believes that the most critical accounting estimates upon which the financial condition depends, and which involve the most complex or subjective decisions or assessments, are as follows:

- Allowance for credit losses
- Fair value of financial instruments
- Impairment of goodwill
- Employee benefit plans
- Share-based compensation

B. Basis of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries (collectively the "Bank"). Intercompany accounts and transactions have been eliminated.

The Bank consolidates entities where it holds, directly or indirectly, more than 50% of the voting rights or where it otherwise exercises control. Entities where the Bank holds 20% to 50% of the voting rights and/or has the ability to exercise significant influence are accounted for under the equity method, and the pro rata share of their income (loss) is included in other non-interest income.

C. Foreign Currency Translation

Assets, liabilities, revenues and expenses denominated in Bermuda dollars are translated to US dollars at par. Assets and liabilities of the parent company arising from other foreign currency transactions are translated into US dollars at the rates of exchange prevailing at the balance sheet date. The resulting gains or losses are included in foreign exchange revenue in the consolidated statements of operations.

The assets and liabilities of foreign currency-based subsidiaries are translated at the rate of exchange prevailing on the balance sheet date, while associated revenues and expenses are translated to US dollars at the average rates of exchange prevailing throughout the year. Unrealized translation gains or losses on investments in foreign currency-based subsidiaries are recorded as a separate component of Shareholders' equity within accumulated other comprehensive income (loss) ("AOCIL"). Gains and losses on foreign currency-based subsidiaries are recorded in the consolidated statements of operations when the Bank ceases to have a controlling financial interest in a foreign currency-based subsidiary.

D. Assets Held in Trust or Custody

Securities and properties (other than cash and deposits held with the Bank and its subsidiaries) held in trust, custody, agency or fiduciary capacity for customers are not included in the consolidated balance sheets because the Bank is not the beneficiary of these assets.

E. Cash and cash equivalents

Cash and cash equivalents includes cash on hand, cash items in the process of collection, amounts due from correspondent banks and highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in fair value. Such investments are those with a maturity of three months or less from the date of acquisition and include unrestricted term deposits, certificates of deposit and treasury bills.

F. Securities Purchased Under Agreement to Resell

Securities purchased under agreement to resell are treated as collateralized lending transactions. The obligation to resell is recorded at the value of the cash paid on purchase adjusted for the amortization of the difference between the purchase price and the agreed resell price. The amortization of this amount is recorded as interest income.

G. Short-Term Investments

Short-term investments have maturities of one year or less from the date of acquisition, are only subject to an insignificant risk of change in fair value and comprise (1) restricted term and demand deposits, and (2) unrestricted term deposits, certificate of deposits and treasury bills with a maturity greater than three months from the date of acquisition.

H. Investments

Investments are reported on the consolidated balance sheets at their trade date.

Equity method investments which include investments whereby the Bank has the ability to influence, but not control, the financial or operating policies of such entities, are accounted for using the equity method of accounting.

Equity securities with readily determinable fair values are carried at fair value in the consolidated balance sheets, with unrealized gains and losses included in the consolidated statements of operations as net gains (losses) on equity securities.

Contained within other assets are investments in private equity for which the Bank does not have sufficient rights or ownership interests to follow the equity method of accounting. Unquoted equity investments which are held directly by the Bank and which do not have readily determinable fair values are recorded at cost, less impairment, plus or minus observable price changes from transactions of identical or similar securities.

Debt securities are classified as available-for-sale ("AFS") or held-to-maturity ("HTM").

Investments are classified primarily as AFS when used to manage the Bank's exposure to interest rate and liquidity movements, as well as to make strategic longer-term investments. AFS investments are carried at fair value in the consolidated balance sheets with unrealized gains and losses reported in AOCIL, net of the allowance for credit losses. Investments that the Bank has the positive intent and ability to hold to maturity are classified as HTM and are carried at amortized cost in the consolidated balance sheets, net of the allowance for credit losses. Unrecognized gains and losses on HTM securities are disclosed in the notes to the consolidated financial statements.

The specific identification method is used to determine realized gains and losses on investments, which are included in net gains (losses) on equity securities and net realized gains (losses) on AFS investments respectively, in the consolidated statements of operations.

Dividend and interest income, including amortization of premiums and discounts, on securities for which cash flows are not considered uncertain are included in interest income in the consolidated statements of operations.

Impairment and credit losses (From January 1, 2020)

For debt securities, where management does not expect to recover the entire amortized cost basis of the security and intends to sell such securities or it is more likely than not that the Bank will be required to sell the securities before recovering the amortized cost, the Bank recognizes an impairment loss equal to the full difference between the amortized cost basis and the fair value of those securities through the statement of operations. Following the recognition of impairment, the security's new amortized cost basis is the previous basis less impairment.

When management does not intend to sell or it is more likely than not that the Bank will hold such securities until recovering the amortized cost, management determines whether any credit losses exist. See "Note 2.J: Allowance for Credit Losses".

Recognition of other-than-temporary impairments (Prior to January 1, 2020)

For debt securities, management considers a decline in fair value to be other-than-temporary when it does not expect to recover the entire amortized cost basis of the security. Investments in debt securities in unrealized loss positions are analyzed as part of management's ongoing assessment of other-than-temporary impairment ("OTTI"). When management intends to sell such securities or it is more likely than not that the Bank will be required to sell the securities before recovering the amortized cost, it recognizes an impairment loss equal to the full difference between the amortized cost basis and the fair value of those securities. When management does not intend to sell or it is more likely than not that the Bank will hold such securities until recovering the amortized cost, management determines whether any credit losses exist to identify any OTTI.

Under certain circumstances, management will perform a qualitative determination and consider a variety of factors, including the length of time and extent to which the fair value has been less than cost; adverse conditions specifically related to the industry, geographic area or financial condition of the issuer or underlying collateral of a security; payment structure of the security; changes to the rating of the security by a rating agency; the volatility of the fair value changes; and changes in fair value of the security after the balance sheet date. Alternatively, management estimates cash flows over the remaining lives of the underlying security to assess whether credit losses exist.

In situations where there is a credit loss, only the amount of impairment relating to credit losses on AFS and HTM investments is recognized in net income. For AFS investments, the decrease in fair value relating to factors other than credit losses is recognized in AOCIL. Cash flow estimates take into account expectations of relevant market and economic data as of the end of the reporting period, including, for example, underlying loan-level data, and structural features of securitization, such as subordination, excess spread, over collateralization or other forms of credit enhancement. The degree of judgment involved in determining the recoverable value of an investment security is dependent upon the availability of observable market prices or observable market parameters. When observable market prices and parameters do not exist, judgment is necessary to estimate recoverable value which gives rise to added uncertainty in the assessment. The assessment takes into consideration factors such as interest rate changes, movements in credit spreads, default rate assumptions, prepayment assumptions, type and quality of collateral, and market sentiment.

Management's fair valuations may include inputs and assumptions that are less observable or require greater estimation, thereby resulting in values which may be greater or lower than the actual value at which the investments may be ultimately sold or the ultimate cash flows that may be recovered. If the assumptions on which management based its fair valuations change, the Bank may experience additional OTTI or realized losses or gains, and the period-to-period changes in value could vary significantly.

I. Loans

Loans are reported as the principal amount outstanding, net of allowance for credit losses, unearned income, fair value adjustments arising from hedge accounting and net deferred loan fees. Interest income is recognized over the term of the loan using the effective interest method, or on a basis approximating a level rate of return over the term of the loan, except for loans classified as non-accrual. Prepayments are treated as a reduction of principal outstanding which is recognized upon receipt of payment. Prepayment penalties, if applicable under the terms of the specific loan agreement, are recognized also upon receipt of payment.

Acquired loans

Acquired loans that, as of the date of acquisition, have experienced a more-than-insignificant deterioration in credit quality since origination, are accounted for as purchased credit-deteriorated ("PCD") loans. PCD loans are recorded at their purchase price with an adjustment to the amortized cost basis for the initial expected credit losses at the time of acquisition, i.e. via a balance sheet gross-up. Changes in estimates of expected credit losses after acquisition are recognized as a movement in provision for credit recoveries (losses) in the statement of operations. Generally, acquired loans that meet the Bank's definition for non-accrual status are considered to be PCD loans.

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The Bank's purchased credit-impaired ("PCI") loans outstanding as at January 1, 2020 are now classified as PCD loans and both the amortized cost and an allowance for expected credit losses are disclosed and included with other non-PCD loans' figures. The Bank will continue to recognize the amortization of the noncredit discount, if any, as interest income based on the yield of such assets as at the date of purchase.

Participated or Assigned Loans

The Bank may act as lead lender on large loans from time to time and may for strategic or commercial reasons, assign portions of such loans to other market participants. Such assignments are without full right of recourse to the Bank as the lead lender and participants/assignees accept all risks and obligations of the ultimate borrower associated with their proportional participation and assignment in such loans. The Bank records the unassigned portion of the principal outstanding in such loans on the consolidated balance sheets and records only its proportional share of interest income on the unassigned portion of the loan in the consolidated statement of operations.

Impaired loans

A loan is considered to be impaired when, based on current information and events, the Bank determines that it will not be able to collect all amounts due according to the original loan contract, including scheduled interest payments. Impaired loans include all non-accruing loans and all loans modified in a troubled debt restructuring ("TDR") even if full collectability is expected following the restructuring.

If the Bank determines that the expected realizable value of the impaired loan is less than the recorded investment in the loan (net of previous charge-offs, deferred loan fees or costs and unamortized premium or discount), impairment is recognized through an allowance estimate. If the Bank determines that part of the allowance is uncollectible, that amount is charged off.

Non-accrual

Commercial, commercial real estate and consumer loans (excluding credit card consumer loans) are placed on non-accrual status if:

- in the opinion of management, full payment of principal or interest is in doubt; or
- principal or interest is 90 days past due.

Residential mortgages are placed on non-accrual status immediately if:

- in the opinion of management, full payment of principal or interest is in doubt; or
- when principal or interest is 90 days past due, unless the loan is well secured and any ongoing collection efforts are reasonably expected to result in repayment of all amounts due under the contractual terms of the loan.

Cash received on non-accrual loans is applied firstly against the past due principal amount of the loan and secondly to past due interest and fees. Interest income on these loans is recognized only after the entire past due principal balance receivable is recovered and only to the extent that interest payments are received in cash.

Loans are returned to accrual status when:

- none of the principal or accrued interest is past due (with certain exceptions as noted below) and the Bank expects repayment of the remaining contractual obligation; or
- when the loan becomes well secured and in the process of collection.

Loans modified in a TDR

A modification of a loan constitutes a TDR when a borrower is experiencing financial difficulty and the modification constitutes a concession from originally agreed terms. If a restructuring is considered a TDR, the Bank is required to make certain disclosures to the notes of the consolidated financial statements and evaluate the restructured loan for impairment. The Bank employs various types of concessions when modifying a loan which may include extension of repayment periods, interest rate reductions, principal or interest forgiveness, forbearance, and other actions intended to minimize economic loss and to avoid foreclosure or repossession of collateral.

Commercial and industrial loans modified in a TDR may involve temporary interest-only payments, term extensions, and converting revolving credit lines to term loans. Additional collateral, a co-borrower, or a guarantor may be requested. Commercial mortgage and construction loans modified in a TDR may involve extending the maturity date at an interest rate lower than the current market rate for new debt with similar risk, or substituting or adding a new borrower or guarantor. Construction loans modified in a TDR may also involve extending the interest-only payment period.

Residential mortgage modifications generally involve a short-term forbearance period after which the missed payments are added to the end of the loan term, thereby extending the maturity date. Interest continues to accrue on the missed payments and as a result, the effective yield on the mortgage remains unchanged. As the forbearance period usually involves an insignificant payment delay they typically do not meet the reporting criteria for a TDR.

Automobile loans modified in a TDR are primarily composed of loans where the Bank has lowered monthly payments by extending the term.

When a loan undergoes a TDR, the determination of the loan's accrual versus non-accrual status following the modification depends on several factors. As with the risk rating process, the accrual status decision for such a loan is a separate and distinct process from the loan's TDR analysis and determination. Management considers the following in determining the accrual status of restructured loans:

- If the loan was appropriately on accrual status prior to the restructuring, the borrower has demonstrated performance under the previous terms, and the Bank's credit evaluation shows the borrower's capacity to continue to perform under the restructured terms (both principal and interest payments), it is likely that the appropriate conclusion is for the loan to remain on accrual at the time of the restructuring. This evaluation must include consideration of the borrower's sustained historical repayment performance for a reasonable period prior to the date on which the loan was restructured. A sustained period of repayment performance generally would be a minimum of six months and would involve payments of cash or cash equivalents; or
- If the loan was on non-accrual status before the restructuring, but the Bank's credit evaluation shows the borrower's capacity to meet the restructured terms, the loan would likely remain as non-accrual until the borrower has demonstrated a reasonable period of sustained repayment performance. As noted above, this period generally would be at least six months (thereby providing reasonable assurance as to the ultimate collection of principal and interest in full under the modified terms). Sustained performance before the restructuring may be taken into account.

Loans that have been modified in a TDR are restored to accrual status only when interest and principal payments are brought current for a continuous period of six months under the modified terms. However, performance prior to the modification, or significant events that coincide with the modification, are included in assessing whether the borrower can meet the new terms and may result in the loan being returned to accrual status at the time of loan modification or after a shorter performance period. If the borrower's ability to meet the revised payment schedule is uncertain, the loan remains on non-accrual status.

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A loan that is modified in a TDR prior to becoming impaired will be left on accrual status if full collectability in accordance with the restructured terms is expected. The Bank may enter into a TDR for loans that are in default, or at risk of defaulting, even if the loan is not impaired.

A loan that had previously been modified in a TDR and is subsequently refinanced under current underwriting standards at a market rate with no concessionary terms is accounted for as a new loan and is no longer reported as a TDR.

Delinquencies

The entire balance of an account is contractually delinquent if the minimum payment of principal or interest is not received by the specified due date. Delinquency is reported on loans that are more than 30 days past due.

Charge-offs

The Bank recognizes charge-offs when it determines that loans are uncollectible, and this generally occurs when all commercially reasonable means of recovering the loan balance have been exhausted.

Commercial and consumer loans are either fully or partially charged-off down to the fair value of collateral securing the loans when:

- management judges the loan to be uncollectible;
- repayment is expected to be protracted beyond reasonable time frames;
- the asset has been classified as a loss by either the Bank's internal loan review process or third party appraisers; or
- the customer has filed bankruptcy and the loss becomes evident owing to a lack of assets or cash flow.

The outstanding balance of commercial and consumer real estate secured loans and residential mortgages that are in excess of the estimated property value, less costs to sell, is charged-off once there is reasonable assurance that such excess outstanding balance is not recoverable.

Credit card consumer loans that are contractually 180 days past due and other consumer loans with an outstanding balance under \$100,000 that are contractually 180 days past due are generally written off and reported as charge-offs.

J. Allowance for Credit Losses

Accounting for Financial Instruments - Credit losses

Starting on January 1, 2020 the Bank adopted Accounting Standards Update ("ASU") 2016-13 Financial Instruments – Credit Losses (Topic 326). Accordingly, from the date of adoption, the Bank uses a current expected credit loss model ("CECL") which is based on expected losses. The model used by the Bank up to December 31, 2019 to estimate credit losses was based on incurred losses. The CECL model is applied by the Bank to the measurement of credit losses on financial instruments at amortized cost, including loan receivables and HTM debt securities. The Bank also applies the CECL model to certain off-balance sheet credit exposures such as undrawn loan commitments, standby letters of credit, financial guarantees, and other similar instruments. In line with Topic 326, the Bank will present credit losses on AFS securities as a valuation allowance rather than as a direct write-down. Changes in expected credit losses are recorded through the respective credit loss allowances on the consolidated balance sheets as well as in the provision for credit losses (recoveries) in the consolidated statements of operations.

The Bank's PCI loans outstanding as at January 1, 2020 were classified as PCD loans and both the amortized cost and an allowance for expected credit losses were disclosed and included with other non-PCD loans' figures. The Bank will continue to recognize the amortization of the noncredit discount, if any, as interest income based on the yield of such assets.

The Bank has not restated comparative information previously accounted for under the incurred loss and the PCI models. The total adjustment resulting from the adoption of this methodology on the opening balance of the Bank's accumulated deficit as at January 1, 2020 was a negative adjustment of \$7.8 million relating to the Bank's loan portfolio.

Under the CECL model, the Bank collects and maintains attributes as they relate to its financial instruments that are within the scope of CECL including fair value of collateral, expected performance over the lifetime of the instruments and reasonable and supportable assumptions about future economic conditions. The Bank's measurement of expected losses takes into account historical loss information and is primarily based on the product of: the respective instrument's probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD"). For AFS securities, any allowance for credit losses is based on an impairment assessment.

The Bank made the accounting policy election to write off accrued interest receivable on loans that are placed on non-accrual status by reversing the then accrued interest balance against interest income revenue.

The Bank maintains an allowance for credit losses, which in management's opinion is adequate to absorb all estimated credit-related losses that are expected in its lending and off-balance sheet credit-related arrangements at the balance sheet date.

Management measures expected credit losses on HTM and AFS debt securities on a collective basis by major security type when similar risk characteristics exist, or failing that, on an individual basis.

For AFS debt securities in an unrealized loss position, the Bank first assesses whether it intends to sell, or it is more likely than not that it will be required to sell the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through income. For AFS debt securities that do not meet the aforementioned criteria, the Bank evaluates whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, management considers the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions specifically related to the security, among other factors. If this assessment indicates that a credit loss exists, the present value of cash flows expected to be collected from the security is compared to the amortized cost basis of the security. If the present value of cash flows expected to be collected is less than the amortized cost basis, a credit loss exists and an allowance for credit losses is recorded for the credit loss, limited by the amount that the fair value is less than the amortized cost basis. Any impairment that has not been recorded through an allowance for credit losses is recognized in other comprehensive income.

Losses are charged against the allowance when management believes the uncollectibility of an AFS debt security is confirmed or when either of the criteria regarding intent or requirement to sell is met.

The allowance for credit losses on loans is a valuation account that is deducted from the loans' amortized cost basis to present the net amount expected to be collected on the loans. Loans are charged off against the allowance when management believes the uncollectibility of a loan balance is confirmed. Expected recoveries typically do not exceed the aggregate of amounts previously charged-off and expected to be charged-off.

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Management estimates the allowance balance using relevant available information, from internal and external sources, relating to past events, current conditions, and reasonable and supportable forecasts as well as the Bank's internal risk rating framework. Historical credit loss experience provides the basis for the estimation of expected credit losses. Adjustments to historical loss information are made for differences in the current-loan specific risk characteristics such as differences in underwriting practices, vintage, portfolio mix, delinquency level, term as well as changes in environmental conditions, such as changes in macroeconomic factors and collateral values.

The allowance for credit losses is measured on a collective pool basis when similar risk characteristics exist. In each of its jurisdictions, the Bank has identified the following portfolio segments: Residential mortgages, Consumer loans (including overdrafts), Commercial loans, Commercial overdrafts, Commercial real estate loans and Credit cards. For loans and overdrafts, management uses a PD and LGD model to estimate the allowance for credit losses. Loans that do not share risk characteristics are evaluated on an individual basis. Loans evaluated individually are not included in the collective evaluation. For Credit cards, management uses a loss rate to estimate expected credit losses.

Expected credit losses are estimated over the contractual term of the loans. The contractual term excludes potential extensions, renewals and modifications unless management has a reasonable expectation at the reporting date that the extension or renewal options included in the original contract will occur or that a troubled debt restructuring will be executed. Credit card receivables do not have stated maturities, therefore establishing a contractual term is performed by using an analytical approximation of behavior.

K. Business Combinations, Goodwill and Intangible Assets

All business combinations are accounted for using the acquisition method. Identifiable intangible assets (mostly customer relationships) are recognized separately from goodwill and are initially valued at fair value using discounted cash flow calculations and other recognized valuation techniques. Goodwill represents the excess of the fair value of the consideration paid for the acquisition of a business over the fair value of the net assets acquired. A contingent purchase consideration is measured at its fair value and recorded on the purchase date. Any subsequent changes in the fair value of a contingent consideration liability will be recorded through the consolidated statements of operations.

Goodwill is tested annually for impairment at the reporting unit level, or more frequently if events or circumstances indicate there may be impairment. If the carrying amount of a reporting unit, including the allocated goodwill, exceeds its fair value, goodwill impairment is measured as the excess of the carrying amount of the reporting unit's allocated goodwill over the implied fair value of the goodwill. Other acquired intangible assets with finite lives are amortized on a straight-line basis over their estimated useful lives, not exceeding 15 years. Intangible assets' estimated lives are re-evaluated annually and an impairment test is carried out if certain indicators of impairment exist.

L. Premises, Equipment and Computer Software

Land is carried at cost. Buildings, equipment and computer software, including leasehold improvements, are carried at cost less accumulated depreciation. The Bank generally computes depreciation using the straight-line method over the estimated useful life of an asset, which is 50 years for buildings, and 3 to 10 years for other equipment. For leasehold improvements the Bank uses the straight-line method over the lesser of the remaining term of the leased facility or the estimated economic life of the improvement. The Bank capitalizes certain costs, including interest costs incurred during the development phase, associated with the acquisition or development of internal use software. Once the software is ready for its intended use, these costs are amortized on a straight-line basis over the software's expected useful life, which is between 5 and 10 years. The Bank capitalizes certain implementation costs for cloud computing arrangements, which includes infrastructure as a service, and these costs are then amortized on a straight-line basis over the term of the arrangement. Management reviews the recoverability of the carrying amount of premises, equipment and computer software when indicators of impairment exist and an impairment charge is recorded when the carrying amount of the reviewed asset is deemed not recoverable by future expected cash flows to be derived from the use and disposition of the asset. If there is a disposition of premises, equipment and computer software, a gain is recorded if the difference of the proceeds on disposition is in excess of the asset's carrying value. Otherwise, a loss is recorded. If there is an abandonment out of premises, equipment and computer software, the full carrying value of the asset is recognized as a loss.

M. Other Real Estate Owned

Other real estate owned ("OREO") comprises real estate property held for sale and commercial and residential real estate properties acquired in partial or total satisfaction of loans acquired through foreclosure proceedings, acceptance of a deed-in-lieu of foreclosure or by taking possession of assets that were used as loan collateral. These properties are initially recorded at fair value less estimated costs to sell the property. If the recorded investment in the loan exceeds the property's fair value at the time of acquisition, a charge-off is recorded against the specific allowance. If the carrying value of the real estate exceeds the property's fair value at the time of reclassification, an impairment charge is recorded in the consolidated statements of operations. Subsequent decreases in the property's fair value below the new cost basis are recorded through the use of a valuation allowance. Subsequent increases in the fair value of a property may be used to reduce the allowance but not below zero. Any operating expenses of the property are recognized through charges to non-interest expense.

N. Leases

In the normal course of operations, the Bank enters into leasing agreements either as the lessee or the lessor. The Bank recognizes right-of-use assets and lease liabilities for operating leases. Lease liabilities are measured as the present value of future lease payments, including term renewals that are reasonably certain to occur, discounted using the Bank's incremental borrowing interest rate. Right-of-use assets are measured as the carrying amount of the related lease liabilities adjusted for prepaid or accrued lease payments, unamortized lease incentive received, unamortized initial direct costs and any impairment of the right-of-use asset.

The Bank made accounting policy elections not to separate lease components from non-lease components for all classes of underlying assets; and not to recognize a right-of-use asset and a lease liability for leases with a term at inception of 12 months or less, including renewal options that are reasonably certain to be exercised (referred to as "short term leases").

O. Derivatives

All derivatives are recognized on the consolidated balance sheets at their fair value. On the date that the Bank enters into a derivative contract, it designates the derivative as either: a hedge of the fair value of a recognized asset or liability (a fair value hedge); a hedge of a forecasted transaction or the variability of cash flows that are to be received or paid in connection with a recognized asset or liability (a cash flow hedge); a hedge of an exposure to foreign currency risk of a net investment in a foreign operation (a net investment hedge); or, an instrument that is held for trading or non-hedging purposes (a trading or non-hedging derivative instrument).

All instruments utilized as a hedging instrument in a fair value hedge or cash flow hedge must have one or more underlying notional amounts, no or a minimal net initial investment and a provision for net settlement in the contract to meet the definition of a derivative instrument. Instruments utilized as a hedging instrument in a hedge of a net investment in foreign operations may be derivative instruments or non-derivatives.

The changes in the fair value of a derivative that is designated and qualifies as a fair value hedge, along with changes in the fair value of the hedged asset or liability that are attributable to the hedged risk, are recorded in the consolidated statements of operations.

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The changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge, to the extent that the hedge is effective, are recorded in other comprehensive income ("OCI") and the ineffective portion is recorded in the statement of operations. That is, ineffectiveness from a derivative that overcompensates for changes in the hedged cash flows is recorded in the consolidated statements of operations. However, the ineffectiveness from a derivative that under compensates is not recorded in the consolidated statements of operations.

The changes in the fair value of a derivative that is designated and qualifies as a foreign currency hedge is recorded in either current year earnings or OCI, depending on whether the hedging relationship satisfies the criteria for a fair value or cash flow hedge. If, however, a derivative is used as a hedge of a net investment in a foreign operation, the changes in the derivative's fair value, to the extent that the derivative is effective as a hedge, are recorded in the CTA account within OCI.

Changes in the fair value of trading and non-hedging derivative instruments are reported in the consolidated statements of operations.

The Bank formally documents all relationships between hedging instruments and hedged items, as well as its risk management objectives and strategies for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value, cash flow, or foreign currency hedges to specific assets and liabilities on the consolidated balance sheets or specific firm commitments or forecasted transactions.

The Bank also formally assesses whether the derivatives that are used in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of hedged items and whether those derivatives may be expected to remain highly effective in future periods.

For those hedge relationships that are terminated, hedge designations that are elected to be removed, forecasted transactions that are no longer expected to occur, or where the hedge relationship ceases to be highly effective, the hedge accounting treatment described in the paragraphs above is no longer applied and the end-user derivative is terminated or transferred to the trading designation. For fair value hedges, any changes to the carrying value of the hedged item prior to the discontinuance remain as part of the basis of the asset or liability. When a cash flow hedge is discontinued, the net derivative gain (loss) remains in AOCIL unless it is probable that the forecasted transaction will not occur in the originally specified time period.

P. Collateral

The Bank pledges assets as collateral as required for various transactions involving security repurchase agreements, deposit products and derivative financial instruments. Assets that have been pledged as collateral, including those that can be sold or repledged by the secured party, continue to be reported on the Bank's consolidated balance sheets under the same line items as non-pledged assets of the same type.

Q. Employee Benefit Plans

The Bank maintains trustee pension plans for substantially all employees as either non-contributory defined benefit plans or defined contribution plans. Benefits under the defined benefit plans are based primarily on the employee's years of credited service and average annual salary during the final years of employment as defined in the plans. The Bank also provides post-retirement medical benefits for certain qualifying active and retired Bermuda-based employees.

Expense for the defined benefit pension plans and the post-retirement medical benefits plan is composed of (a) the actuarially determined benefits for the current year's service, (b) imputed interest on the actuarially determined liability of the plan, (c) in the case of the defined benefit pension plans, the expected investment return on the fair value of plan assets and (d) amortization of certain items over the expected average remaining service life of employees in the case of the active defined benefit pension plans, estimated average remaining life expectancy of the inactive participants in the case of the inactive defined benefit pension plans and the expected average remaining service life to full eligibility age of employees covered by the plan in the case of the post-retirement medical benefits plan. The items amortized are amounts arising as a result of experience gains and losses, changes in assumptions, plan amendments and the change in the net pension asset or post-retirement medical benefits liability arising on adoption of revised accounting standards.

For each of the defined benefit pension plans and for the post-retirement medical benefits plan, the assets and liabilities recognized for accounting purposes are reported in other assets and employee benefit plans respectively. The actuarial gains and losses, transition obligation and prior service costs of the defined pension plans and post-retirement medical benefits plan are recognized in OCI net of tax and amortized to net income over the average service period for the active defined benefit pension plans and post-retirement medical benefits plan and average remaining life expectancy for the inactive defined benefit pension plans.

For the defined contribution pension plans, the Bank and participating employees provide an annual contribution based on each participating employee's pensionable earnings. Amounts accrued are expensed in the period.

R. Share-Based Compensation

The Bank engages in equity settled share-based payment transactions in respect of services received from eligible employees. The fair value of the services received is measured by reference to the fair value of the shares or share options granted on the date of the grant. The cost of the employee services received in respect of the shares or share options granted is recognized in the consolidated statements of operations over the shorter of the vesting or service period.

The fair value of the options granted is determined using option pricing models, which take into account the exercise price of the option, the current share price, the risk-free interest rate, expected dividend rate, the expected volatility of the share price over the life of the option and other relevant factors. The fair value of unvested share awards is deemed to be the closing price of the publicly traded Bank shares on grant date. The fair value of time vesting conditions is taken into account by adjusting the number of shares or share options included in the measurement of the costs of employee services so that ultimately, the amount recognized in the consolidated statements of operations reflects the number of vested shares or share options. The Bank recognizes compensation cost for awards with performance conditions if and when the Bank concludes that it is probable that the performance condition will be achieved, net of an estimate of pre-vesting forfeitures (e.g., due to termination of employment prior to vesting).

S. Revenue Recognition

Trust, custody and other administration services fees include fees for private and institutional trust, executorship, and custody services. Asset management fees include fees for investment management, investment advice and brokerage services. Fees are recognized as revenue over the period of the relationship or when the Bank has rendered all services to the client and is entitled to collect the fee from the client, as long as there are no contingencies associated with the fees.

Banking services fees primarily include fees for letters of credit and other financial guarantees, compensating balances, overdraft facilities and other financial services-related products as well as credit card fees. Letters of credit and other financial guarantees fees are recognized as revenue over the period in which the related guarantee is outstanding. Credit card fees are comprised of merchant discounts, late fees and membership fees, net of interchange and rewards costs. Credit card fees and other fees are recognized in the period in which the service is provided.

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Foreign exchange revenue includes fees earned on currency exchange transactions which are recognized when such transactions occur, as well as gains and losses recognized when translating financial instruments held or due in currencies other than the local functional currency at the rates of exchange prevailing at the balance sheet date.

Loan interest income is accrued and recognized in revenues over time and also includes the amortization of deferred non-refundable loan origination and commitment fees. These fees are recognized as an adjustment of yield over the life of the related loan. Loan origination and commitment fees are offset by their related direct costs and only the net amounts are deferred and amortized into interest income.

Dividend and interest income, including amortization of premiums and discounts, on securities for which cash flows are not considered uncertain are included in interest income in the consolidated statements of operations. Loans placed on non-accrual status and investments with uncertain cash flows are accounted for under the cost recovery method, whereby all principal, dividends, interest and coupon payments received are applied as a reduction of the amortized cost and carrying amount.

T. Fair Values

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The Bank determines the fair values of assets and liabilities based on the fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The relevant accounting standard describes three levels of inputs that may be used to measure fair value. Equity securities and debt investments classified as AFS, and derivative assets and liabilities, are recognized in the consolidated balance sheets at fair value.

Level 1, 2 and 3 valuation inputs

Management classifies items that are recognized at fair value on a recurring basis based on the level of inputs used in their respective fair value determination as described below.

Fair value inputs are considered Level 1 when based on unadjusted quoted prices in active markets for identical assets.

Fair value inputs are considered Level 2 when based on inputs other than quoted prices that are observable for the asset or liability either directly or indirectly, including inputs in markets that are not considered to be active.

Fair value inputs are considered Level 3 when based on internally developed models using significant unobservable assumptions involving management's estimations or non-binding bid quotes from brokers.

The following methods and assumptions were used in the determination of the fair value of financial instruments:

Cash and cash equivalents

The carrying amount of cash and demand deposits with banks, being short-term in nature, is deemed to approximate fair value.

Cash equivalents include unrestricted term deposits, certificates of deposits and treasury bills with a maturity of less than three months from the date of acquisition and the carrying value at cost is considered to approximate fair value because they are short-term in nature, bear interest rates that approximate market rates, and generally have negligible credit risk.

Short-term investments

Short-term investments comprise restricted term and demand deposits and unrestricted term deposits, certificates of deposit and treasury bills with less than one year but greater than three months' maturity from the date of acquisition. The carrying value at cost is considered to approximate fair value because they are short-term in nature, bear interest rates that approximate market rates, and generally have negligible credit risk.

Equity securities, defined benefit pension plan equity securities, and mutual funds

The fair value of listed equity securities is based upon quoted market values. Investments in actively traded mutual funds are based on their published net asset values.

AFS and HTM investments and defined benefit pension plan fixed income securities

The fair values for AFS investments are generally sourced from third parties. The fair value of fixed income securities is based upon quoted market values where available, "evaluated bid" prices provided by third party pricing services ("pricing services") where quoted market values are not available, or by reference to broker or underwriter bid indications where pricing services do not provide coverage for a particular security. To the extent the Bank believes current trading conditions represent distressed transactions, the Bank may elect to utilize internally generated models. The pricing services typically use market approaches for valuations using primarily Level 2 inputs (in the vast majority of valuations), or some form of discounted cash flow analysis.

Pricing services indicate that they will only produce an estimate of fair value if there is objectively verifiable information available to produce a valuation. Standard inputs to the valuations provided by the pricing services listed in approximate order of priority for use when available include: reported trades, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, and reference data. The pricing services may prioritize inputs differently on any given day for any security, and not all inputs listed are available for use in the evaluation process on any given day for each security evaluation. However, the pricing services also monitor market indicators and industry and economic events. When these inputs are not available, pricing services identify "buckets" of similar securities (allocated by asset class types, sectors, sub-sectors, contractual cash flows/structure, and credit rating characteristics) and apply some form of matrix or other modeled pricing to determine an appropriate security value which represents their best estimate as to what a buyer in the marketplace would pay for a security in a current sale.

It is common industry practice to utilize pricing services as a source for determining the fair values of investments where the pricing services are able to obtain sufficient market corroborating information to allow them to produce a valuation at a reporting date. In addition, in the majority of cases, although a value may be obtained from a particular pricing service for a security or class of similar securities, these values are corroborated against values provided by other pricing services. While the Bank receives values for the majority of the investment securities it holds from pricing services, it is ultimately management's responsibility to determine whether the values received and recorded in the financial statements are representative of appropriate fair value measurements.

Broker/dealer quotations are used to value investments with fixed maturities where prices are unavailable from pricing services due to factors specific to the security such as limited liquidity, lack of current transactions, or trades only taking place in privately negotiated transactions. These are considered Level 3 valuations, as significant inputs utilized by brokers may be difficult to corroborate with observable market data, or sufficient information regarding the specific inputs utilized by the broker was not available to support a Level 2 classification.

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For disclosure purposes, HTM investments are fair valued using the same methods described above.

Loans

The majority of loans are variable rate and re-price in response to changes in market rates and hence management estimates that the fair value of loans is not significantly different than their carrying amount. For significant fixed-rate loan exposures, fair value is estimated by discounting the future cash flows, using the current rates at which similar loans would be made to borrowers with similar credit ratings and for the same remaining maturities, of such loans. Management includes the effects of any credit losses recorded against individual loans, which factors in a loan's credit quality, as well as accrued interest in determining the fair value of loans.

Accrued interest

The carrying amounts of accrued interest receivable and payable are assumed to approximate their fair values given their short-term nature.

OREO

OREO assets are carried at the lower of cost or fair value less estimated costs to sell. The determination of fair value, which aims at estimating the realizable value of the properties, is based either on third-party appraisals, when available, or on internal valuation models. Appraisals of OREO properties are updated on an annual basis. Where the fair value of the related property is based on an unadjusted appraised value, the OREO is generally classified as Level 2. Where significant adjustments are made to the appraised value, or based on an internally generated valuation model, the OREO is generally classified as Level 3.

Deposits

The fair value of fixed-rate deposits has been estimated by discounting the contractual cash flows, using market interest rates offered at the balance sheet date for deposits of similar terms. The carrying amount of deposits with no stated maturity date is deemed to equate to the fair value.

Long-term debt

The fair value of the long-term debt has been estimated by discounting the contractual cash flows, using current market interest rates.

Derivatives

Derivative contracts can be exchange traded or over-the-counter ("OTC") derivative contracts and may include forward, swap and option contracts relating to interest rates or foreign currencies. Exchange-traded derivatives typically fall within Level 1 of the fair value hierarchy depending on whether they are deemed to be actively traded or not. OTC derivatives are valued using market transactions and other market evidence whenever possible, including market-based inputs to models, model calibration to market clearing transactions, broker or dealer quotations or alternative pricing sources where an understanding of the inputs utilized in arriving at the valuations is obtained.

Where models are used, the selection of a particular model to value an OTC derivative depends upon the contractual terms and specific risks inherent in the instrument as well as the availability of pricing information in the market. The Bank generally uses similar models to value similar instruments. Valuation models require a variety of inputs, including contractual terms, market prices, yield curves, credit curves, measures of volatility, prepayment rates and correlations of such inputs. For OTC derivatives that trade in liquid markets, such as generic forwards, interest rate swaps and options, model inputs can generally be verified and model selection does not involve significant management judgment.

Goodwill

The fair value of reporting units for which goodwill is recognized is determined when an impairment assessment is performed by discounting estimated future cash flows using discount rates reflecting valuation-date market conditions and risks specific to the reporting unit.

U. Impairment or Disposal of Long-Lived Assets

Impairment losses are recognized when the carrying amount of a long-lived asset exceeds the sum of the undiscounted cash flows expected from its use and disposal. The impairment recognized is measured as the amount by which the carrying amount of the asset exceeds its fair value. Long-lived assets that are to be disposed of other than by sale are classified and accounted for as held for use until the date of disposal or abandonment. Assets that meet certain criteria are classified as held for sale and are measured at the lower of their carrying amounts or fair value less estimated costs to sell.

V. Credit-Related Arrangements

In the normal course of business, the Bank enters into various commitments to meet the credit requirements of its customers. Such commitments, which are not included in the consolidated balance sheet, include:

- commitments to extend credit, which represent undertakings to make credit available in the form of loans or other financing for specific amounts and maturities, subject to certain conditions;
- standby letters of credit, which represent irrevocable obligations to make payments to third parties in the event that the customer is unable to meet its financial obligations; and,
- documentary and commercial letters of credit, related primarily to the import of goods by customers, which represent agreements to honor drafts presented by third parties upon completion of specific activities.

These credit arrangements are subject to the Bank's normal credit standards and collateral is obtained where appropriate. The contractual amounts for these commitments set out in the table in Note 12 represent the maximum payments the Bank would have to make should the contracts be fully drawn, the counterparty default, and any collateral held prove to be of no value. As many of these arrangements will expire or terminate without being drawn upon or are fully collateralized, the contractual amounts do not necessarily represent future cash requirements. The Bank does not carry any liability for these obligations.

W. Income Taxes

The Bank uses the asset and liability method of accounting for income taxes. Under this method, deferred income taxes reflect the net tax effect of temporary differences between the consolidated financial statements' carrying amounts of assets and liabilities and their respective tax bases. Accordingly, a deferred income tax asset or liability is determined for each temporary difference based on the enacted tax rates to be in effect on the expected reversal date of the temporary difference. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Bank records net deferred tax assets to the extent the Bank believes these assets will more likely than not be realized. Net deferred income tax assets or liabilities accumulated as a result of temporary differences are included in other assets or other liabilities, respectively. A valuation allowance is established to reduce deferred income tax assets to the amount more likely than not to be realized. In making such a determination, the Bank considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. In the event the Bank were to determine that it would be able to realize the deferred income tax assets in the future in excess of their net recorded amount, the Bank would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

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The Bank records uncertain tax positions on the basis of a two-step process whereby (1) the Bank determines whether it is more likely than not that the tax positions will be sustained based on the technical merits of the position; and (2) where those tax positions that meet the more-likely-than-not recognition threshold, the Bank recognizes the largest amount of tax benefit that is greater than 50 percent likely to be realized upon ultimate settlement with the related tax authority.

Income taxes on the consolidated statements of operations include the current and deferred portions of the income taxes. The Bank recognizes accrued interest and penalties related to income taxes in operating expenses. Income taxes applicable to items charged or credited directly to shareholders' equity are included in such items.

X. Consolidated Statements of Cash Flows

For the purposes of the consolidated statements of cash flows, cash and cash equivalents includes cash on hand, cash items in the process of collection, amounts due from correspondent banks and highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in fair value, and restricted cash included in short-term investments on the consolidated balance sheets.

Y. Earnings Per Share

Earnings per share have been calculated using the weighted average number of common shares outstanding during the year (see also Note 20: Earnings per share). In periods when basic earnings per share is positive, the dilutive effect of share-based compensation plans is calculated using the treasury stock method, whereby the proceeds received from the exercise of share-based awards are assumed to be used to repurchase outstanding common shares, using the quarterly average market price of the Bank's shares for the period.

Z. New Accounting Pronouncements

The following accounting developments were issued during the year ended December 31, 2022 or are accounting standards pending adoption:

In March 2022, the Financial Accounting Standards Board ("FASB") published ASU 2022-01, Derivatives and Hedging (Topic 815), Fair Value Hedging - Portfolio Layer Method, which will expand companies' abilities to hedge the benchmark interest rate risk of portfolios of financial assets (or beneficial interests) in a fair value hedge. The ASU expands the use of the portfolio layer method (previously referred to as the last-of-layer method) to allow multiple hedges of a single closed portfolio of assets using spot starting, forward starting, and amortizing-notional swaps. The ASU also permits both prepayable and nonprepayable financial assets to be included in the closed portfolio of assets hedged in a portfolio layer hedge. The ASU further requires that basis adjustments not be allocated to individual assets for active portfolio layer method hedges, but rather be maintained on the closed portfolio of assets as a whole. The ASU is effective for public business entities for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years and early adoption is permitted. The Bank does not anticipate that this ASU will have a material impact on its consolidated financial statements.

In March 2022, the FASB published ASU 2022-02, Financial Instruments-Credit Losses (Topic 326), Troubled Debt Restructurings and Vintage Disclosures. ASU 2022-02 addresses areas identified by the FASB as part of its post-implementation review of the credit losses standard (ASU 2016-13) that introduced the CECL model. The amendments eliminate the accounting guidance for troubled debt restructurings ("TDRs") by creditors that have adopted the CECL model and enhance the disclosure requirements for loan refinancings and restructurings made with borrowers experiencing financial difficulty. In addition, the amendments require a public business entity to disclose current-period gross write-offs for financing receivables and net investment in leases by year of origination in the vintage disclosures. For entities that have adopted ASU 2016-13, ASU 2022-02 is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early adoption is permitted if an entity has adopted ASU 2016-13. An entity may elect to early adopt the amendments related to TDRs separately from the amendments related to vintage disclosures. Entities can elect to adopt the guidance on TDRs using either a prospective or modified retrospective transition. If an entity elects to apply a modified retrospective transition, it will record a cumulative effect adjustment to retained earnings in the period of adoption, representing any change in the allowance for credit losses for loans modified in TDRs under ASC 310-40. The Bank has determined that this ASU will only have an effect on certain disclosures from the date of adoption.

In June 2022, the FASB published ASU 2022-03, Fair Value Measurement (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions. The update was issued to increase the comparability of financial information across reporting entities that hold these investments. The amendments clarify that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security. As a result, it should not be considered in measuring fair value. New disclosures are required about the nature of the restrictions and their remaining duration. The ASU is effective for public business entities for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years and early adoption is permitted. The Bank does not anticipate that this ASU will have a material impact on its consolidated financial statements.

In September 2022, the FASB published ASU 2022-04, Liabilities - Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations which establishes the disclosure requirements of supplier finance programs to increase their transparency. FASB investor outreach identified a lack of transparency about supplier finance programs, as no explicit disclosure requirements were in GAAP. Entities that participate in supplier finance programs typically present such obligations in the same balance sheet line item as accounts payable, which can obscure the nature of this activity for financial statement users. The amendments in this Update address investor and other financial statement user requests for additional information about the use of supplier finance programs by the buyer party to understand the effect of those programs on an entity's working capital, liquidity, and cash flows. The ASU is effective for all entities for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, except for the amendment on rollforward information, which is effective for fiscal years beginning after December 15, 2023 and early adoption is permitted. The Bank does not anticipate that this ASU will have a material impact on its consolidated financial statements.

In December 2022, the FASB published ASU 2022-06, Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848. As the current relief in Topic 848 may not cover a period of time during which a significant number of modifications may take place, the amendments in this Update defer the sunset date of Topic 848 from December 31, 2022 to December 31, 2024, after which entities will no longer be permitted to apply the relief in Topic 848. The ASU is effective on December 21, 2022 however, as the Bank elected to early adopt the relief in Topic 848 as at December 31, 2020, this ASU will not have a material impact on its consolidated financial statements.

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Note 3: Cash and cash equivalents

	December 31, 2022	December 31, 2021
Non-interest bearing		
Cash and demand deposits with banks	93,032	115,651
Interest bearing¹		
Demand deposits with banks	258,239	437,644
Cash equivalents	1,749,516	1,626,538
Sub-total - Interest bearing	2,007,755	2,064,182
Total cash and cash equivalents	2,100,787	2,179,833

¹ Interest bearing cash and cash equivalents includes certain demand deposits with banks as at December 31, 2022 in the amount of \$157.2 million (December 31, 2021: \$280.5 million) that are earning interest at a negligible rate.

Note 4: Short-term investments

	December 31, 2022	December 31, 2021
Unrestricted		
Maturing within three months	390,540	818,340
Maturing between three to six months	421,734	252,340
Maturing between six to twelve months	56,445	104,574
Total unrestricted short-term investments	868,719	1,175,254
Affected by drawing restrictions related to minimum reserve and derivative margin requirements		
Interest earning demand and term deposits	15,759	23,664
Total restricted short-term investments	15,759	23,664
Total short-term investments	884,478	1,198,918

Note 5: Investment in securities

Amortized Cost, Carrying Amount and Fair Value

On the consolidated balance sheets, equity securities and AFS investments are carried at fair value and HTM investments are carried at amortized cost.

	December 31, 2022				December 31, 2021			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Equity securities								
Mutual funds	724	—	(488)	236	724	—	(502)	222
Total equity securities	724	—	(488)	236	724	—	(502)	222
Available-for-sale								
US government and federal agencies	1,919,285	14	(206,523)	1,712,776	3,163,964	30,945	(51,285)	3,143,624
Non-US governments debt securities	262,892	—	(11,429)	251,463	291,119	—	(1,526)	289,593
Asset-backed securities - Student loans	5,640	—	(14)	5,626	13,290	—	(116)	13,174
Residential mortgage-backed securities	21,261	—	(2,261)	19,000	27,191	218	(70)	27,339
Total available-for-sale	2,209,078	14	(220,227)	1,988,865	3,495,564	31,163	(52,997)	3,473,730
Held-to-maturity¹								
US government and federal agencies	3,738,080	—	(540,572)	3,197,508	2,763,344	57,497	(34,729)	2,786,112
Total held-to-maturity	3,738,080	—	(540,572)	3,197,508	2,763,344	57,497	(34,729)	2,786,112

¹ For the years ended December 31, 2022, 2021 and 2020, impairments recognized in other comprehensive income for HTM investments were nil.

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Investments with Unrealized Loss Positions

The Bank does not believe that the AFS debt securities that were in an unrealized loss position as of December 31, 2022, comprising 163 securities representing 99.8% of the AFS portfolios' carrying value (December 31, 2021: 67 and 73.6%), represent credit losses. Total gross unrealized AFS losses were 11.1% of the fair value of the affected securities (December 31, 2021: 2.1%).

The Bank's HTM debt securities are comprised of US government and federal agencies securities and have a zero credit loss assumption under the CECL model. HTM debt securities that were in an unrealized loss position as of December 31, 2022, were comprised of 220 securities representing 100.0% of the HTM portfolios' carrying value (December 31, 2021: 57 and 59.1%). Total gross unrealized HTM losses were 16.9% of the fair value of affected securities (December 31, 2021: 2.2%).

Management does not intend to sell and it is likely that management will not be required to sell the securities prior to the anticipated recovery of the cost of these securities. Unrealized losses were attributable primarily to changes in market interest rates, relative to when the investment securities were purchased, and not due to a decrease in the credit quality of the investment securities. The issuers continue to make timely principal and interest payments on the securities. The following describes the processes for identifying credit impairment in security types with the most significant unrealized losses as shown in the preceding tables.

Management believes that all the **US government and federal agencies securities** do not have any credit losses, given the explicit and implicit guarantees provided by the US federal government.

Management believes that all the **Non-US governments debt securities** do not have any credit losses, given the explicit guarantee provided by the issuing government.

Investments in **Asset-backed securities - Student loans** are composed primarily of securities collateralized by Federal Family Education Loan Program loans ("FFELP loans"). FFELP loans benefit from a US federal government guarantee of at least 97% of defaulted principal and accrued interest, with additional credit support provided in the form of over-collateralization, subordination and excess spread, which collectively total in excess of 100%. Accordingly, the vast majority of FFELP loan-backed securities are not exposed to traditional consumer credit risk.

Investments in **Residential mortgage-backed securities** relate to 13 securities (December 31, 2021: 4) which are rated AAA and possess similar significant credit enhancement as described above. No credit losses were recognized on these securities as the weighted average credit support and the weighted average loan-to-value ratios range from 16% - 49% and 47% - 56%, respectively. Current credit support is significantly greater than any delinquencies experienced on the underlying mortgages.

In the following tables, debt securities with unrealized losses that are not deemed to be credit impaired and for which an allowance for credit losses has not been recorded are categorized as being in a loss position for "less than 12 months" or "12 months or more" based on the point in time that the fair value most recently declined below the amortized cost basis.

	<u>Less than 12 months</u>		<u>12 months or more</u>		<u>Total fair value</u>	<u>Total gross unrealized losses</u>
	<u>Fair value</u>	<u>Gross unrealized losses</u>	<u>Fair value</u>	<u>Gross unrealized losses</u>		
December 31, 2022						
Available-for-sale securities with unrealized losses						
US government and federal agencies	713,462	(68,016)	995,154	(138,507)	1,708,616	(206,523)
Non-US governments debt securities	—	—	251,463	(11,429)	251,463	(11,429)
Asset-backed securities - Student loans	—	—	5,626	(14)	5,626	(14)
Residential mortgage-backed securities	14,474	(1,618)	4,526	(643)	19,000	(2,261)
Total available-for-sale securities with unrealized losses	727,936	(69,634)	1,256,769	(150,593)	1,984,705	(220,227)
Held-to-maturity securities with unrealized losses						
US government and federal agencies	1,462,005	(142,228)	1,735,504	(398,344)	3,197,509	(540,572)
December 31, 2021						
Available-for-sale securities with unrealized losses						
US government and federal agencies	2,144,105	(47,214)	102,428	(4,071)	2,246,533	(51,285)
Non-US governments debt securities	267,201	(1,125)	22,392	(401)	289,593	(1,526)
Asset-backed securities - Student loans	—	—	13,174	(116)	13,174	(116)
Residential mortgage-backed securities	8,051	(70)	—	—	8,051	(70)
Total available-for-sale securities with unrealized losses	2,419,357	(48,409)	137,994	(4,588)	2,557,351	(52,997)
Held-to-maturity securities with unrealized losses						
US government and federal agencies	1,568,315	(33,554)	29,713	(1,175)	1,598,028	(34,729)

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Investment Maturities

The following table presents the remaining term to contractual maturity of the Bank's securities. The actual maturities may differ as certain securities offer prepayment options to the borrowers.

December 31, 2022	Remaining term to maturity					No specific or single maturity	Carrying amount
	Within 3 months	3 to 12 months	1 to 5 years	5 to 10 years	Over 10 years		
Available-for-sale							
US government and federal agencies	—	145,471	532,645	160,823	—	873,837	1,712,776
Non-US governments debt securities	—	22,392	229,071	—	—	—	251,463
Asset-backed securities - Student loans	—	—	—	—	—	5,626	5,626
Residential mortgage-backed securities	—	—	—	—	—	19,000	19,000
Total available-for-sale	—	167,863	761,716	160,823	—	898,463	1,988,865
Held-to-maturity							
US government and federal agencies	—	—	—	—	—	3,738,080	3,738,080

Pledged Investments

The Bank pledges certain US government and federal agencies investment securities to further secure the Bank's issued customer deposit products. The secured party does not have the right to sell or repledge the collateral.

Pledged Investments	December 31, 2022		December 31, 2021	
	Amortized cost	Fair value	Amortized cost	Fair value
Available-for-sale	—	—	807	842
Held-to-maturity	32,938	24,991	33,102	31,958

Sale Proceeds and Realized Gains and Losses of AFS Securities

	Year ended											
	December 31, 2022				December 31, 2021				December 31, 2020			
	Sale proceeds	Gross realized gains	Gross realized (losses)	Transfers of HTM ¹	Sale proceeds	Gross realized gains	Gross realized (losses)	Transfers of HTM	Sale proceeds	Gross realized gains	Gross realized (losses)	Transfers of HTM
US government and federal agencies	—	—	—	998,157	189,417	1,563	(1,802)	—	349,699	1,171	(55)	—
Non-US governments debt securities	—	—	—	—	—	—	—	—	3,266	104	—	—
Asset-backed securities - Student loans	7,631	—	(19)	—	—	—	—	—	—	—	—	—
Total	7,631	—	(19)	998,157	189,417	1,563	(1,802)	—	352,965	1,275	(55)	—

¹During the year ended December 31, 2022, certain investments were transferred out of the AFS categorization and into HTM. The transfers were recorded at the fair value of the securities on the date of transfer. The related net unrealized losses of \$99.1 million that were recorded in AOCIL will be accreted into net income over the remaining life of the transferred investments using the effective interest rate method.

Taxability of Interest Income

None of the investments' interest income have received a specific preferential income tax treatment in any of the jurisdictions in which the Bank owns investments.

Note 6: Loans

The principal means of securing residential mortgages, personal, credit card and business loans are entitlements over assets and guarantees. Mortgage loans are generally repayable over periods of up to thirty years and personal and business loans are generally repayable over terms not exceeding five years. Government loans are repayable over a variety of terms which are individually negotiated. Amounts owing on credit cards are revolving and typically a minimum amount is due within 30 days from billing. The effective yield on total loans as at December 31, 2022 is 5.91% (December 31, 2021: 4.00%). The interest receivable on total loans as at December 31, 2022 is \$16.6 million (December 31, 2021: \$7.6 million). The interest receivable is included in Accrued interest and other assets on the consolidated balance sheets and is excluded from all loan amounts disclosed in this note.

Loans' Credit Quality

The four credit quality classifications set out in the following tables are defined below and describe the credit quality of the Bank's lending portfolio. These classifications each encompass a range of more granular internal credit rating grades. Loans' internal credit ratings are assigned by the Bank's customer relationship managers as well as members of the Bank's jurisdictional and Group Credit Committees. The borrowers' financial condition is documented at loan origination and maintained periodically thereafter at a frequency which can be up to monthly for certain loans. The loans' performing status, as well as current economic trends, are continuously monitored. The Bank's jurisdictional and Group Credit Committees meet on a monthly basis. The Bank also has a group Provisions and Impairments Committee which is responsible for approving significant provisions and other impairment charges.

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A **pass** loan shall mean a loan that is expected to be repaid as agreed. A loan is classified as pass where the Bank is not expected to face repayment difficulties because the present and projected cash flows are sufficient to repay the debt and the repayment schedule as established by the agreement is being followed. Loans in this category are reviewed by the Bank's management on at least an annual basis.

A **special mention** loan shall mean a loan under close monitoring by the Bank's management on at least a quarterly basis. Loans in this category are currently still performing, but are potentially weak and present an undue credit risk exposure, but not to the point of justifying a classification of substandard.

A **substandard** loan shall mean a loan whose evident unreliability makes repayment doubtful and there is a threat of loss to the Bank unless the unreliability is averted. Loans in this category are under close monitoring by the Bank's management on at least a quarterly basis.

A **non-accrual** loan shall mean either management is of the opinion full payment of principal or interest is in doubt or when principal or interest is 90 days past due unless it is a residential mortgage loan which is well secured and collection efforts are reasonably expected to result in amounts due. Loans in this category are under close monitoring by the Bank's management on at least a quarterly basis.

The amortized cost of loans by credit quality classifications and allowance for expected credit losses by class of loans is as follows:

December 31, 2022	Pass	Special mention	Substandard	Non-accrual	Total amortized cost	Allowance for expected credit losses	Total net loans
Commercial loans							
Government	281,518	—	—	—	281,518	(1,368)	280,150
Commercial and industrial	298,137	—	796	18,461	317,394	(10,359)	307,035
Commercial overdrafts	123,874	—	632	45	124,551	(416)	124,135
Total commercial loans	703,529	—	1,428	18,506	723,463	(12,143)	711,320
Commercial real estate loans							
Commercial mortgage	613,090	2,082	1,503	3,182	619,857	(884)	618,973
Construction	7,474	—	—	—	7,474	—	7,474
Total commercial real estate loans	620,564	2,082	1,503	3,182	627,331	(884)	626,447
Consumer loans							
Automobile financing	20,673	—	—	161	20,834	(93)	20,741
Credit card	77,419	—	295	—	77,714	(1,043)	76,671
Overdrafts	44,414	—	—	6	44,420	(355)	44,065
Other consumer ¹	56,699	—	—	801	57,500	(1,205)	56,295
Total consumer loans	199,205	—	295	968	200,468	(2,696)	197,772
Residential mortgage loans	3,419,186	8,132	102,413	40,398	3,570,129	(9,238)	3,560,891
Total	4,942,484	10,214	105,639	63,054	5,121,391	(24,961)	5,096,430

¹ Other consumer loans' amortized cost includes \$9 million of cash and portfolio secured lending and \$37 million of lending secured by buildings in construction or other collateral.

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December 31, 2021	Pass	Special mention	Substandard	Non-accrual	Total amortized cost	Allowance for expected credit losses	Total net loans
Commercial loans							
Government	259,572	—	—	—	259,572	(969)	258,603
Commercial and industrial	353,337	—	1,079	18,549	372,965	(10,115)	362,850
Commercial overdrafts	104,814	145	446	2	105,407	(42)	105,365
Total commercial loans	717,723	145	1,525	18,551	737,944	(11,126)	726,818
Commercial real estate loans							
Commercial mortgage	673,167	4,034	1,578	4,740	683,519	(1,168)	682,351
Construction	9,645	—	—	—	9,645	—	9,645
Total commercial real estate loans	682,812	4,034	1,578	4,740	693,164	(1,168)	691,996
Consumer loans							
Automobile financing	21,412	—	—	117	21,529	(88)	21,441
Credit card	72,569	—	284	—	72,853	(1,420)	71,433
Overdrafts	42,293	—	—	4	42,297	(236)	42,061
Other consumer ¹	76,963	—	72	1,038	78,073	(1,276)	76,797
Total consumer loans	213,237	—	356	1,159	214,752	(3,020)	211,732
Residential mortgage loans	3,464,857	14,070	107,361	36,595	3,622,883	(12,759)	3,610,124
Total	5,078,629	18,249	110,820	61,045	5,268,743	(28,073)	5,240,670

¹ Other consumer loans' amortized cost includes \$13 million of cash and portfolio secured lending and \$57 million of lending secured by buildings in construction or other collateral.

Based on the most recent analysis performed, the amortized cost of loans by year of origination and credit quality indicator is as follows:

December 31, 2022	Pass	Special mention	Substandard	Non-accrual	Total amortized cost
Loans by origination year					
2022	971,776	—	—	4	971,780
2021	646,436	—	—	20	646,456
2020	485,944	142	508	23	486,617
2019	680,939	—	277	3,118	684,334
2018	393,623	—	12,133	1,355	407,111
Prior	1,499,410	9,767	91,795	58,483	1,659,455
Overdrafts and credit cards	264,356	305	926	51	265,638
Total amortized cost	4,942,484	10,214	105,639	63,054	5,121,391

December 31, 2021	Pass	Special mention	Substandard	Non-accrual	Total amortized cost
Loans by origination year					
2021	911,403	—	232	13	911,648
2020	605,139	—	—	3	605,142
2019	917,700	—	290	181	918,171
2018	513,293	6,060	12,548	1,154	533,055
2017	493,091	—	3,400	12,215	508,706
Prior	1,393,929	11,131	93,620	47,474	1,546,154
Overdrafts and credit cards	244,074	1,058	730	5	245,867
Total amortized cost	5,078,629	18,249	110,820	61,045	5,268,743

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Age Analysis of Past Due Loans (Including Non-Accrual Loans)

The following tables summarize the past due status of the loans. The aging of past due amounts are determined based on the contractual delinquency status of payments under the loan and this aging may be affected by the timing of the last business day at period end. Loans less than 30 days past due are included in current loans.

December 31, 2022	30 - 59 days	60 - 89 days	More than 90 days	Total past due loans	Total current	Total amortized cost
Commercial loans						
Government	—	—	—	—	281,518	281,518
Commercial and industrial	5	—	18,461	18,466	298,928	317,394
Commercial overdrafts	—	—	45	45	124,506	124,551
Total commercial loans	5	—	18,506	18,511	704,952	723,463
Commercial real estate loans						
Commercial mortgage	363	—	3,181	3,544	616,313	619,857
Construction	—	—	—	—	7,474	7,474
Total commercial real estate loans	363	—	3,181	3,544	623,787	627,331
Consumer loans						
Automobile financing	104	5	160	269	20,565	20,834
Credit card	423	231	295	949	76,765	77,714
Overdrafts	—	—	6	6	44,414	44,420
Other consumer	179	16	797	992	56,508	57,500
Total consumer loans	706	252	1,258	2,216	198,252	200,468
Residential mortgage loans	30,813	4,081	49,486	84,380	3,485,749	3,570,129
Total amortized cost	31,887	4,333	72,431	108,651	5,012,740	5,121,391

December 31, 2021	30 - 59 days	60 - 89 days	More than 90 days	Total past due loans	Total current	Total amortized cost
Commercial loans						
Government	—	—	—	—	259,572	259,572
Commercial and industrial	53	—	18,549	18,602	354,363	372,965
Commercial overdrafts	—	—	1	1	105,406	105,407
Total commercial loans	53	—	18,550	18,603	719,341	737,944
Commercial real estate loans						
Commercial mortgage	—	—	4,739	4,739	678,780	683,519
Construction	—	—	—	—	9,645	9,645
Total commercial real estate loans	—	—	4,739	4,739	688,425	693,164
Consumer loans						
Automobile financing	56	34	118	208	21,321	21,529
Credit card	471	681	285	1,437	71,416	72,853
Overdrafts	—	—	5	5	42,292	42,297
Other consumer	67	15	1,038	1,120	76,953	78,073
Total consumer loans	594	730	1,446	2,770	211,982	214,752
Residential mortgage loans	12,602	1,501	44,763	58,866	3,564,017	3,622,883
Total amortized cost	13,249	2,231	69,498	84,978	5,183,765	5,268,743

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Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Changes in Allowances For Credit Losses

The decrease in the allowance for expected credit losses as at December 31, 2022 was primarily attributable to a decrease in provisioned non-accrual loans, net paydowns and foreign exchange movements in the portfolio. This was partially offset by weaker forward-looking economic forecasts and the extension of a large, long-term government facility in the Cayman Islands. The provision increase during the year ended December 31, 2022 was driven by the aforementioned weaker forward-looking economic forecasts and the extension of a large, long-term government facility in the Cayman Islands. As per the Bank's accounting policy, as disclosed in Note 2, the Bank continuously collects and maintains attributes related to financial instruments within the scope of CECL, including current conditions, and reasonable and supportable assumptions about future economic conditions.

	Year ended December 31, 2022				
	Commercial	Commercial real estate	Consumer	Residential mortgage	Total
Balance at the beginning of year	11,126	1,168	3,020	12,759	28,073
Provision increase (decrease)	2,378	(285)	1,252	(675)	2,670
Recoveries of previous charge-offs	1	—	1,150	262	1,413
Charge-offs	(1,314)	—	(2,721)	(2,912)	(6,947)
Other	(48)	1	(5)	(196)	(248)
Allowances for expected credit losses at end of year	12,143	884	2,696	9,238	24,961

	Year ended December 31, 2021				
	Commercial	Commercial real estate	Consumer	Residential mortgage	Total
Balance at the beginning of year	11,609	2,104	4,476	15,909	34,098
Provision increase (decrease)	(431)	(936)	(1,552)	(581)	(3,500)
Recoveries of previous charge-offs	65	—	1,344	262	1,671
Charge-offs	(112)	—	(1,248)	(2,806)	(4,166)
Other	(5)	—	—	(25)	(30)
Allowances for expected credit losses at end of year	11,126	1,168	3,020	12,759	28,073

Collateral-dependent loans

Management identified that the repayment of certain commercial and consumer mortgage loans is expected to be provided substantially through the operation or the sale of the collateral pledged to the Bank ("collateral-dependent loans"). The Bank believes that for the vast majority of loans identified as collateral-dependent, the sale of the collateral will be sufficient to fully reimburse the loan's carrying amount.

Non-Performing Loans

During the year ended December 31, 2022, no interest was recognized on non-accrual loans. Non-performing loans at December 31, 2022 include PCD loans, which have all been on non-accrual status since their acquisition. No credit deteriorated loans were purchased during the period.

	December 31, 2022				December 31, 2021			
	Non-accrual loans with an allowance	Non-accrual loans without an allowance	Past due more than 90 days and accruing	Total non-performing loans	Non-accrual loans with an allowance	Non-accrual loans without an allowance	Past due more than 90 days and accruing	Total non-performing loans
Commercial loans								
Commercial and industrial	18,159	302	—	18,461	18,530	19	—	18,549
Commercial overdrafts	—	45	—	45	—	2	—	2
Total commercial loans	18,159	347	—	18,506	18,530	21	—	18,551
Commercial real estate loans								
Commercial mortgage	1,494	1,688	—	3,182	885	3,855	—	4,740
Total commercial real estate loans	1,494	1,688	—	3,182	885	3,855	—	4,740
Consumer loans								
Automobile financing	141	20	—	161	117	—	—	117
Credit card	—	—	295	295	—	—	284	284
Overdrafts	—	6	—	6	—	4	—	4
Other consumer	649	152	—	801	850	188	—	1,038
Total consumer loans	790	178	295	1,263	967	192	284	1,443
Residential mortgage loans								
Total non-performing loans	20,621	19,777	10,964	51,362	29,549	7,046	12,969	49,564
Total non-performing loans	41,064	21,990	11,259	74,313	49,931	11,114	13,253	74,298

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Loans modified in a TDR

As at December 31, 2022, the Bank had nil loans that were modified in a TDR during the preceding 12 months that subsequently defaulted (December 31, 2021: nil; December 31, 2020: nil).

TDRs entered into during the period

	Year ended December 31, 2022			
	Number of contracts	Pre-modification recorded loans	Modification: interest capitalization	Post-modification recorded loans
Residential mortgage loans	6	2,836	425	3,261

	Year ended December 31, 2021			
	Number of contracts	Pre-modification recorded loans	Modification: interest capitalization	Post-modification recorded loans
Residential mortgage loans	1	284	2	286

TDRs Outstanding

	December 31, 2022		December 31, 2021	
	Accrual	Non-accrual	Accrual	Non-accrual
Commercial loans	796	—	847	—
Commercial real estate loans	1,503	2,357	1,578	2,445
Residential mortgage loans	59,175	10,342	60,453	12,653
Total TDRs outstanding	61,474	12,699	62,878	15,098

Note 7: Credit risk concentrations

Concentrations of credit risk in the lending and off-balance sheet credit-related arrangements portfolios arise when a number of customers are engaged in similar business activities, are in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions. The Bank regularly monitors various segments of its credit risk portfolio to assess potential concentrations of risks and to obtain collateral when deemed necessary. In the Bank's commercial portfolio, risk concentrations are evaluated primarily by industry and by geographic region of loan origination. In the consumer portfolio, concentrations are evaluated primarily by products. Credit exposures include loans, guarantees and acceptances, letters of credit and commitments for undrawn lines of credit. Unconditionally cancellable credit cards and overdraft lines of credit are excluded from the tables below.

The following table summarizes the credit exposure of the Bank by geographic region. The exposure amounts disclosed below do not include accrued interest and are gross of allowances for credit losses and gross of collateral held.

Geographic region	December 31, 2022				December 31, 2021			
	Cash and cash equivalents, resale agreements and short-term investments	Loans	Off-balance sheet	Total credit exposure	Cash and cash equivalents, resale agreements and short-term investments	Loans	Off-balance sheet	Total credit exposure
Belgium	2,641	—	—	2,641	8,675	—	—	8,675
Bermuda	40,671	1,920,467	243,904	2,205,042	46,683	2,080,385	297,731	2,424,799
Canada	1,216,876	—	—	1,216,876	1,193,387	—	—	1,193,387
Cayman	36,609	1,236,373	233,599	1,506,581	39,018	1,060,328	379,518	1,478,864
Germany	20,422	—	—	20,422	85,886	—	—	85,886
Guernsey	1	674,562	199,714	874,277	1	735,786	169,904	905,691
Ireland	26,597	—	—	26,597	37,236	—	—	37,236
Japan	13,071	—	—	13,071	4,873	—	—	4,873
Jersey	—	150,769	35,042	185,811	—	78,048	34,298	112,346
Norway	99,777	—	—	99,777	57,132	—	—	57,132
Switzerland	2,748	—	—	2,748	2,441	—	—	2,441
The Bahamas	1,521	7,510	—	9,031	1,511	9,361	—	10,872
United Kingdom	715,750	1,131,710	108,406	1,955,866	990,624	1,304,835	117,200	2,412,659
United States	865,671	—	—	865,671	1,003,365	—	—	1,003,365
Other	2,781	—	—	2,781	4,026	—	—	4,026
Total gross exposure	3,045,136	5,121,391	820,665	8,987,192	3,474,858	5,268,743	998,651	9,742,252

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(In thousands of US dollars, unless otherwise stated)

Note 8: Premises, equipment and computer software

Category	December 31, 2022			December 31, 2021		
	Cost	Accumulated depreciation	Net carrying value	Cost	Accumulated depreciation	Net carrying value
Land	8,333	—	8,333	8,333	—	8,333
Buildings	181,929	(81,184)	100,745	169,806	(77,229)	92,577
Equipment	25,527	(17,764)	7,763	26,129	(17,509)	8,620
Computer hardware and software in use	197,846	(182,353)	15,493	197,941	(175,612)	22,329
Computer software in development	13,807	—	13,807	6,827	—	6,827
Total	427,442	(281,301)	146,141	409,036	(270,350)	138,686

Depreciation charged to operating expenses	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Buildings (included in Property expense)	5,963	6,005	5,511
Equipment (included in Property expense)	2,390	2,323	1,929
Computer hardware and software (included in Technology and communication expense)	10,124	18,902	21,773
Total depreciation charged to operating expenses	18,477	27,230	29,213

Note 9: Goodwill and other intangible assets

Goodwill

	Segment			Total
	Cayman	Channel Islands and the UK	Other	
Balance at December 31, 2019	551	22,245	2,042	24,838
Foreign exchange translation adjustment	—	719	70	789
Balance at December 31, 2020	551	22,964	2,112	25,627
Foreign exchange translation adjustment	—	(226)	(45)	(271)
Balance at December 31, 2021	551	22,738	2,067	25,356
Foreign exchange translation adjustment	—	(2,466)	2	(2,464)
Balance at December 31, 2022	551	20,272	2,069	22,892

Customer Relationship Intangible Assets

Segment	December 31, 2022			December 31, 2021		
	Cost	Accumulated amortization	Net carrying amount	Cost	Accumulated amortization	Net carrying amount
Bermuda	29,785	(17,868)	11,917	29,785	(16,438)	13,347
Cayman	16,517	(7,764)	8,753	16,517	(6,663)	9,854
Channel Islands and the UK	89,396	(62,380)	27,016	89,396	(56,030)	33,366
Other	5,563	(1,771)	3,792	5,563	(1,380)	4,183
Total	141,261	(89,783)	51,478	141,261	(80,511)	60,750

Customer relationships are initially valued based on the present value of net cash flows expected to be derived solely from the recurring customer base existing as at the date of acquisition. Customer relationship intangible assets may or may not arise from contracts.

During the years ended December 31, 2022 and 2021, no new customer intangible assets were acquired. During the year ended December 31, 2022, no amounts were written off (December 31, 2021: \$1.9 million). The amortization expense amounted to \$5.7 million (December 31, 2021: \$6.0 million, December 31, 2020: \$5.8 million) and the foreign exchange translation adjustment increased the net carrying amount by \$3.6 million (December 31, 2021: increased by \$0.4 million, December 31, 2020: decreased by \$1.3 million). The estimated aggregate amortization expense for each of the succeeding five years is \$5.7 million.

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Note 10: Deposits

By Maturity

December 31, 2022	Demand		Total demand deposits	Term				Total term deposits	Total deposits
	Non-interest bearing	Interest bearing		Within 3 months	3 to 6 months	6 to 12 months	After 12 months		
Demand or less than \$100k ¹	3,039,701	6,844,127	9,883,828	32,764	9,814	12,848	11,391	66,817	9,950,645
Term - \$100k or more	N/A	N/A	—	2,093,464	447,471	423,737	75,759	3,040,431	3,040,431
Total deposits	3,039,701	6,844,127	9,883,828	2,126,228	457,285	436,585	87,150	3,107,248	12,991,076

December 31, 2021	Demand		Total demand deposits	Term				Total term deposits	Total deposits
	Non-interest bearing	Interest bearing		Within 3 months	3 to 6 months	6 to 12 months	After 12 months		
Demand or less than \$100k ¹	2,820,609	8,104,668	10,925,277	30,181	8,949	13,094	12,426	64,650	10,989,927
Term - \$100k or more	N/A	N/A	—	1,627,330	578,096	589,161	85,709	2,880,296	2,880,296
Total deposits	2,820,609	8,104,668	10,925,277	1,657,511	587,045	602,255	98,135	2,944,946	13,870,223

¹ The weighted-average interest rate on interest-bearing demand deposits as at December 31, 2022 is 0.47% (December 31, 2021: -0.03%).

By Type and Segment

	December 31, 2022			December 31, 2021		
	Payable on demand	Payable on a fixed date	Total	Payable on demand	Payable on a fixed date	Total
Bermuda	3,813,274	674,895	4,488,169	3,820,647	690,102	4,510,749
Cayman	3,641,646	651,168	4,292,814	4,087,131	524,918	4,612,049
Channel Islands and the UK	2,428,908	1,781,185	4,210,093	3,017,499	1,729,926	4,747,425
Total deposits	9,883,828	3,107,248	12,991,076	10,925,277	2,944,946	13,870,223

Note 11: Employee benefit plans

The Bank maintains trustee pension plans including non-contributory defined benefit plans and a number of defined contribution plans, and provides post-retirement medical benefits to its qualifying retirees. The defined benefit provisions under the pension plans are generally based upon years of service and average salary during the relevant years of employment. The defined benefit and post-retirement medical plans are not open to new participants and are non-contributory and the funding required is provided by the Bank, based upon the advice of independent actuaries. The defined benefit pension plans are in the Bermuda, Guernsey and UK jurisdictions, and the defined benefit post-retirement medical plan is in Bermuda. The Bank has a residual obligation on top of its defined contribution plan in Mauritius.

Bermuda Defined Benefit and Post-Retirement Medical Benefit Plan

The Bank amortizes prior service credit resulting from plan amendments that occurred when plan members were active employees, on a linear basis over the expected average remaining service period (to full eligibility) of active members expected to receive benefits under the plan. Such remaining service periods are as follows: 3.1 years for the 2010 plan amendments and 4.6 years for the 2011 plan amendments. Plan amendments occurring in 2014 and 2019 resulted in the recognition of new prior service costs on December 31, 2014 and December 31, 2019 on a plan for which substantially all members are now inactive. The Bank has elected to amortize these new prior service costs on a linear basis over 21 years and 16 years, respectively, which was the average remaining life expectancy of members eligible for benefits under the plan at the time of the amendments.

Guernsey Defined Benefit Pension Plan

Effective October 2014, all the participants of the Guernsey defined benefit pension plan became inactive and in accordance with GAAP, the net actuarial loss of the Guernsey defined benefit pension plan is amortized over the then estimated average remaining life expectancy of the inactive participants of 39 years. Prior to all of the Guernsey participants being inactive, the net actuarial loss of the Guernsey defined benefit pension plan was amortized to net income over the estimated average remaining service period for active members of 15 years.

UK Defined Benefit Pension Plan

The UK defined benefit pension plan closed to new members effective April 1, 2002 and subsequently closed to further accrual of new benefits effective October 1, 2012. During the years ended December 31, 2018 and 2017, the pension plan settled in cash the liability of several plan members and an insurance policy was purchased in the name of the trustees of the plan to match the liabilities of remaining members who were pensioners as at March 31, 2016.

Mauritius Portable Retirement Gratuity Fund

Under the Mauritius Workers' Right Act of 2019, the Portable Retirement Gratuity Fund (the "Fund") was established for the purpose of providing for the payment of a gratuity on the death or retirement of an employee and came into effect on January 1, 2020. The Fund operates as a centralized defined contribution scheme with employers required to make upfront contributions at prescribed rates based on employees' monthly remuneration. Any shortfall in this lump sum gratuity in an employees accumulated fund upon death or retirement, is to be funded by the Bank. Accordingly, the Bank recognizes the related service and net interest costs as well as the related net actuarial liability.

The following table presents the financial position of the Bank's defined benefit pension plans and the Bank's post-retirement medical benefit plan, which is unfunded. The Bank measures the benefit obligations and plan assets annually on each December 31 and therefore, the most recent measurement date is December 31, 2022.

The 2022 net actuarial gain recognized in the defined benefit plans is largely due to an increase in discount rates used to value the benefit obligation, partially offset by actual returns on investments being lower than expected.

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(In thousands of US dollars, unless otherwise stated)

	December 31, 2022		December 31, 2021		December 31, 2020	
	Pension plans	Post- retirement medical benefit plan	Pension plans	Post- retirement medical benefit plan	Pension plans	Post- retirement medical benefit plan
Accumulated benefit obligation at end of year	106,748	91,983	157,478	125,968	179,018	128,167
Change in projected benefit obligation						
Projected benefit obligation at beginning of year	157,478	125,968	179,018	128,167	168,791	110,347
Service cost	—	130	—	82	43	66
Interest cost	3,026	3,114	2,729	2,594	3,957	3,270
Benefits paid	(9,153)	(5,774)	(9,050)	(3,712)	(7,412)	(4,069)
Prior service cost	—	—	403	—	48	—
Settlement and curtailment of liability	—	—	(5,906)	—	(7,505)	—
Actuarial (gain) loss	(37,425)	(31,455)	(9,093)	(1,163)	18,326	18,553
Foreign exchange translation adjustment	(7,178)	—	(623)	—	2,770	—
Projected benefit obligation at end of year	106,748	91,983	157,478	125,968	179,018	128,167
Change in plan assets						
Fair value of plan assets at beginning of year	179,025	—	182,516	—	175,400	—
Actual return on plan assets	(24,574)	—	10,265	—	14,945	—
Employer contribution	207	5,774	1,680	3,712	2,917	4,069
Plan settlement	—	—	(5,625)	—	(5,903)	—
Benefits paid	(9,153)	(5,774)	(9,050)	(3,712)	(7,412)	(4,069)
Foreign exchange translation adjustment	(8,211)	—	(761)	—	2,569	—
Fair value of plan assets at end of year	137,294	—	179,025	—	182,516	—
Amounts recognized in the consolidated balance sheets consist of:						
Prepaid benefit cost included in other assets	30,581	—	21,809	—	6,610	—
Accrued pension benefit cost included in employee benefit plans liability	(35)	(91,983)	(262)	(125,968)	(3,112)	(128,167)
Surplus (deficit) of plan assets over projected benefit obligation at measurement date	30,546	(91,983)	21,547	(125,968)	3,498	(128,167)

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	Year ended					
	December 31, 2022		December 31, 2021		December 31, 2020	
	Pension plans	Post- retirement medical benefit plan	Pension plans	Post- retirement medical benefit plan	Pension plans	Post- retirement medical benefit plan
Amounts recognized in accumulated other comprehensive income (loss) consist of:						
Net actuarial gain (loss), excluding deferred taxes	(47,452)	14,528	(55,809)	(18,371)	(73,506)	(21,213)
Net prior service credit (cost)	(453)	(6,818)	(591)	(7,342)	(226)	(7,866)
Deferred income taxes assets (liabilities)	—	—	—	—	1,477	—
Net amount recognized in accumulated other comprehensive income (loss)	(47,905)	7,710	(56,400)	(25,713)	(72,255)	(29,079)

Annual benefit expense

Expense component	Line item in the consolidated statements of operations						
Service cost	Salaries and other employee benefits	—	130	58	82	97	66
Interest cost	Non-service employee benefits expense	3,027	3,114	2,729	2,594	3,960	3,270
Expected return on plan assets	Non-service employee benefits expense	(6,633)	—	(6,437)	N/A	(7,547)	N/A
Amortization of net actuarial (gains) losses	Non-service employee benefits expense	2,218	1,444	2,766	1,679	2,412	—
Amortization of prior service (credit) loss	Non-service employee benefits expense	81	524	(25)	524	21	524
(Gain) loss on settlement	Net other gains (losses)/Non-service employee benefits expense	(907)	—	1,679	—	1,326	—
Defined benefit (income) expense		(2,214)	5,212	770	4,879	269	3,860
Defined contribution expense		7,825	—	8,259	—	8,933	—
Total benefit (income) expense		5,611	5,212	9,029	4,879	9,202	3,860

The components of benefit expense (income) other than the service cost component are included in the line item non-service employee benefits expense in the consolidated statements of operations.

Other changes recognized in other comprehensive income (loss)

Net gain (loss) arising during the year	6,218	31,455	14,772	1,163	(8,363)	(18,553)
Net loss (gain) on settlement reclassified to net income	(907)	—	—	—	—	—
Prior service credit (cost) arising during the year	—	—	(399)	—	(47)	—
Amortization of net actuarial (gains) losses	2,218	1,444	2,766	1,679	2,412	—
Amortization of prior service (credit) cost	81	524	(25)	524	20	524
Change in deferred taxes	—	—	(1,462)	—	456	—
Foreign exchange adjustment	885	—	203	—	(421)	—
Total changes recognized in other comprehensive income (loss)	8,495	33,423	15,855	3,366	(5,943)	(18,029)

To develop the expected long-term rate of return on the plan assets assumption for each plan, the Bank considered the historical returns and the future expectations for returns for each asset class, as well as the target asset allocations of the assets. The weighted average discount rate used to determine benefit obligations at the end of the year is derived from interest rates on high quality corporate bonds with maturities that match the expected benefit payments.

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Actuarial Assumptions

	December 31, 2022		Year ended December 31, 2021		December 31, 2020	
	Pension plans	Post-retirement medical benefit plan	Pension plans	Post-retirement medical benefit plan	Pension plans	Post-retirement medical benefit plan
Actuarial assumptions used to determine annual benefit expense						
Weighted average discount rate	2.30 %	2.88 %	1.90 %	2.53 %	2.65 %	3.38 %
Weighted average rate of compensation increases ¹	3.00 %	N/A	2.20 %	N/A	2.30 %	N/A
Weighted average expected long-term rate of return on plan assets	4.45 %	N/A	3.65 %	N/A	4.60 %	N/A
Weighted average annual medical cost increase rate	N/A	7.0% to 4.5% in 2040	N/A	7.2% to 4.5% in 2040	N/A	7.2% to 4.5% in 2040
Actuarial assumptions used to determine benefit obligations at end of year						
Weighted average discount rate	5.20 %	5.37 %	2.30 %	2.88 %	1.90 %	2.53 %
Weighted average rate of compensation increases ¹	3.00 %	N/A	3.00 %	N/A	2.20 %	N/A
Weighted average annual medical cost increase rate	N/A	6.9% to 4.5% in 2040	N/A	7.0% to 4.5% in 2040	N/A	7.0% to 4.5% in 2040

¹ Only the UK subsidiary plan is impacted by potential future compensation increases.

Investments Policies and Strategies

The pension plans' assets are managed according to each plan's investment policy statement, which outlines the purpose of the plan, statement of objectives and guidelines and investment policy. The asset allocation is diversified and any use of derivatives is limited to hedging purposes only.

	December 31, 2022		December 31, 2021	
	Actual allocation	Target allocation	Actual allocation	Target allocation
Weighted average actual and target asset allocations of the pension plans by asset category				
Debt securities (including debt mutual funds)	71 %	74 %	39 %	32 %
Equity securities (including equity mutual funds)	19 %	9 %	51 %	53 %
Other	10 %	17 %	10 %	15 %
Total	100 %	100 %	100 %	100 %

Fair Value Measurements of Pension Plans' Assets

The following table presents the fair value of the plans' assets by category and level of inputs used in their respective fair value determination as described in "Note 2: Significant accounting policies", except the level 3 security, for which the valuation determination is described following the below table:

	December 31, 2022				December 31, 2021			
	Fair value determination				Fair value determination			
	Level 1	Level 2	Level 3	Total fair value	Level 1	Level 2	Level 3	Total fair value
US government and federal agencies	—	35,332	—	35,332	—	23,040	—	23,040
Non-US governments debt securities	—	43,728	—	43,728	—	1,090	—	1,090
Corporate debt securities	—	18,050	—	18,050	—	45,596	—	45,596
Equity securities and mutual funds	954	25,172	—	26,126	1,111	90,193	—	91,304
Other	600	2,504	10,954	14,058	180	431	17,384	17,995
Total fair value of plans' assets	1,554	124,786	10,954	137,294	1,291	160,350	17,384	179,025

The Level 3 assets consist of insured annuity policies covering the full pension benefits of certain plan members. The fair value of these policies is deemed equal to the actuarial value of the projected benefit obligation for the insured benefits. At December 31, 2022, 18.4% (December 31, 2021: 29.2%) of the assets of the pension plans were mutual funds and equity securities managed or administered by wholly-owned subsidiaries of the Bank. At December 31, 2022, 0.7% (December 31, 2021: 0.6%) of the plans' assets were invested in common shares of the Bank.

The investments of the pension funds are diversified across a range of asset classes and are diversified within each asset class. The assets are generally actively managed with the goal of adding some incremental value through security selection and asset allocation.

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Estimated 2023 Bank contribution to and estimated benefit payments for the next ten years under the pension and post-retirement medical benefit plans are as follows:

	Pension plans	Post- retirement medical benefit plan
Estimated Bank contributions for the full year ending December 31, 2023	—	5,044
Estimated benefit payments by year:		
2023	7,300	5,044
2024	7,200	5,286
2025	7,100	5,536
2026	7,100	5,786
2027	7,700	5,999
2028-2032	36,000	32,319

Note 12: Credit related arrangements, repurchase agreements and commitments

Commitments

As at December 31, 2022, the Bank was committed to expenditures under contract for information technology services sourcing of \$42.9 million (December 31, 2021: \$53.3 million). The Bank funded its expenditures with its own resources and plans to fund those currently in progress with its own resources, which may be obtained through cash on hand, cash flows from operations and issuances of debt and equity securities.

The following table summarizes the Bank's commitments for sourcing and other agreements:

Year ending December 31	Sourcing	Other	Total
2023	12,584	12,915	25,499
2024	11,114	5,936	17,050
2025	10,602	3,120	13,722
2026	8,572	1,078	9,650
2027	—	1,084	1,084
2028 & thereafter	—	1,405	1,405
Total commitments	42,872	25,538	68,410

The Bank enters into contractual commitments to extend credit, normally with fixed expiration dates or termination clauses, at specified rates and for specific purposes. Substantially all of the Bank's commitments to extend credit are contingent upon customers maintaining specific credit standards at the time of loan funding. Management assesses the credit risk associated with certain commitments to extend credit in determining the level of the allowance for expected credit losses.

The Bank has a facility with one of its custodians, whereby the Bank may offer up to US \$200 million of standby letters of credit to its customers on a fully secured basis. Under the standard terms of the facility, the custodian has the right to set-off against securities held of 110% of the utilized facility. At December 31, 2022, \$121.3 million (December 31, 2021: \$145.7 million) of standby letters of credit were issued under this facility.

Outstanding unfunded commitments to extend credit	December 31, 2022	December 31, 2021
Commitments to extend credit	564,324	717,077
Documentary and commercial letters of credit	2,331	1,522
Total unfunded commitments to extend credit	566,655	718,599
Allowance for credit losses	(274)	(551)

Credit-Related Arrangements

Standby letters of credit and letters of guarantee are issued at the request of a Bank customer in order to secure the customer's payment or performance obligations to a third party. These guarantees represent an irrevocable obligation of the Bank to pay the third party beneficiary upon presentation of the guarantee and satisfaction of the documentary requirements stipulated therein, without investigation as to the validity of the beneficiary's claim against the customer. Generally, the term of the standby letters of credit does not exceed one year, while the term of the letters of guarantee does not exceed four years. The types and amounts of collateral security held by the Bank for these standby letters of credit and letters of guarantee are generally represented by deposits with the Bank or a charge over assets held in mutual funds.

The Bank considers the fees collected in connection with the issuance of standby letters of credit and letters of guarantee to be representative of the fair value of its obligation undertaken in issuing the guarantee. In accordance with applicable accounting standards related to guarantees, the Bank defers fees collected in connection with the issuance of standby letters of credit and letters of guarantee. The fees are then recognized in income proportionately over the life of the credit agreements. The following table presents the outstanding financial guarantees. Collateral is shown at estimated market value less selling cost. Where the collateral is cash, it is shown gross including accrued income.

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Outstanding financial guarantees	December 31, 2022			December 31, 2021		
	Gross	Collateral	Net	Gross	Collateral	Net
Standby letters of credit	250,543	243,393	7,150	276,464	269,204	7,260
Letters of guarantee	3,467	3,431	36	3,588	3,552	36
Total	254,010	246,824	7,186	280,052	272,756	7,296

Repurchase agreements

The Bank utilizes repurchase agreements and resell agreements (reverse repurchase agreements) to manage liquidity. The risks of these transactions include changes in the fair value in the securities posted or received as collateral and other credit-related events. The Bank manages these risks by ensuring that the collateral involved is appropriate and by monitoring the value of the securities posted or received as collateral on a daily basis.

As at December 31, 2022, the Bank had 2 open positions (December 31, 2021: 19) in resell agreements with a remaining maturity of less than 30 days involving pools of mortgages issued by US federal agencies. The amortized cost of these resell agreements is \$59.9 million (December 31, 2021: \$96.1 million) and are included in securities purchased under agreements to resell on the consolidated balance sheets. As at December 31, 2022, there were no positions (December 31, 2021: no positions) which were offset on the consolidated balance sheets to arrive at the carrying value, and there was no collateral amount which was available to offset against the future settlement amount.

Legal Proceedings

There are actions and legal proceedings pending against the Bank and its subsidiaries which arose in the normal course of its business. Management, after reviewing all actions and proceedings pending against or involving the Bank and its subsidiaries, considers that the resolution of these matters would in the aggregate not be material to the consolidated financial position of the Bank, except as noted in the following paragraph.

As publicly announced, in November 2013, the US Attorney's Office for the Southern District of New York applied for and secured the issuance of so-called John Doe Summonses to six US financial institutions with which the Bank had correspondent bank relationships in connection with a US cross border tax investigation. On August 3, 2021, the Bank announced it had reached a resolution with the United States Department of Justice concerning this inquiry. The resolution is in the form of a non-prosecution agreement with a three-year term. The Bank paid \$5.6 million in respect of Forfeiture and Tax Restitution Amounts which is consistent with that previously provisioned for.

Note 13: Leases

The Bank enters into operating lease agreements either as the lessee or the lessor, mostly for office and parking spaces as well as for small office equipment. The terms of the existing leases, including renewal options that are reasonably certain to be exercised, extend up to the year 2035. Certain lease payments will be adjusted during the related lease's term based on movements in the relevant consumer price index.

	Year ended	
	December 31, 2022	December 31, 2021
Lease costs		
Operating lease costs	7,576	8,248
Short-term lease costs	2,387	1,407
Sublease income	(1,197)	(1,359)
Total net lease cost	8,766	8,296
Operating lease income	1,012	1,243
Other information for the period		
Right-of-use assets related to new operating lease liabilities	3,476	1,575
Operating cash flows from operating leases	7,630	8,402

	Year ended	
	December 31, 2022	December 31, 2021
Other information at end of period		
Operating leases right-of-use assets (included in other assets on the balance sheets)	33,641	39,525
Operating lease liabilities (included in other liabilities on the balance sheets)	32,965	38,789
Weighted average remaining lease term for operating leases (in years)	9.24	9.81
Weighted average discount rate for operating leases	5.40 %	5.25 %

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The following table summarizes the maturity analysis of the Bank's commitments for long-term leases as at December 31, 2022:

Year ending December 31	Operating Leases
2023	7,129
2024	6,457
2025	4,133
2026	3,357
2027	3,152
2028 & thereafter	17,735
Total commitments	41,963
Less: effect of discounting cash flows to their present value	(8,998)
Operating lease liabilities	32,965

Note 14: Loan interest income

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Contractual interest earned	243,115	214,539	224,474
Amortization			
Amortization of fair value hedge	(259)	(281)	(300)
Amortization of loan origination fees (net of amortized costs)	6,026	6,847	5,436
Amortization of fair value adjustment on purchased loans	508	439	1,046
Total loan interest income	249,390	221,544	230,656
Balance of unamortized fair value hedge included in loans as at year end	836	1,095	1,376
Balance of unamortized loan fees included in loans as at year end	11,878	11,926	12,204

Note 15: Segmented information

The Bank is managed by the Chairman & Chief Executive Officer ("CEO") on a geographic basis. The Bank presents four reportable segments, three geographical and one other: Bermuda, Cayman, Channel Islands and the UK, and Other. The Other segment is composed of several non-reportable operating segments that have been aggregated in accordance with GAAP. Each reportable segment has a managing director who reports to the Chairman & CEO. The Chairman & CEO and the segment managing director have final authority over resource allocation decisions and performance assessment.

The geographic segments reflect this management structure and the manner in which financial information is currently evaluated by the Chairman & CEO. Segment results are determined based on the Bank's management reporting system, which assigns balance sheet and statement of operations items to each of the geographic segments. The process is designed around the Bank's organizational and management structure and, accordingly, the results derived are not necessarily comparable with similar information published by other financial institutions. A description of each reportable segment and table of financial results is presented below.

Accounting policies of the reportable segments are the same as those described in Note 2: Significant accounting policies. Transactions between segments are accounted for on an accrual basis and are all eliminated upon consolidation. The Bank generally does not allocate assets, revenues and expenses among its business segments, with the exception of certain corporate overhead expenses and loan participation revenue and expenses. Loan participation revenue and expenses are allocated pro-rata based upon the percentage of the total loan funded by each jurisdiction participating in the loan.

The **Bermuda** segment provides a comprehensive range of retail, commercial and private banking services. Retail services are offered to individuals and small to medium-sized businesses through three branch locations and through internet banking, mobile banking, automated teller machines ("ATMs") and debit cards. Retail services include deposit services, consumer and mortgage lending, credit cards and personal insurance products. Commercial banking includes commercial lending and mortgages, cash management, payroll services, remote banking and letters of credit. Treasury services include money market and foreign exchange activities. Bermuda's wealth management offering consists of Butterfield Asset Management Limited, which provides investment management, advisory and brokerage services and Butterfield Trust (Bermuda) Limited, which provides trust, estate, company management and custody services. Bermuda is also the location of the Bank's head offices and accordingly, retains the unallocated corporate overhead expenses.

The **Cayman** segment provides a comprehensive range of retail, commercial and private banking services. Retail services are offered to individuals and small to medium-sized businesses through three branch locations and through internet banking, mobile banking, ATMs and debit cards. Retail services include deposit services, consumer and mortgage lending, credit cards and property/auto insurance. Commercial banking includes commercial lending and mortgages, cash management, payroll services, remote banking and letters of credit. Treasury services include money market and foreign exchange activities. Cayman's wealth management offering comprises investment management, advisory and brokerage services and Butterfield Trust (Cayman) Limited, which provides trust, estate and company management.

The **Channel Islands and the UK** segment includes the jurisdictions of Guernsey and Jersey (Channel Islands), and the UK. In the Channel Islands, a broad range of services are provided to private clients and financial intermediaries including mortgage lending, private banking and treasury services, internet banking, wealth management and fiduciary services. The jurisdiction also offers mortgage lending to the retail market. The UK jurisdiction provides mortgage services for high-value residential properties.

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The **Other** segment includes the jurisdictions of The Bahamas, Canada, Mauritius, Singapore and Switzerland. These operating segments individually and collectively do not meet the quantitative threshold for segmented reporting and are therefore aggregated as non-reportable operating segments.

Total Assets by Segment	December 31, 2022	December 31, 2021
Bermuda	5,405,365	5,728,466
Cayman	4,566,144	4,973,402
Channel Islands and the UK	4,626,183	5,234,880
Other	35,874	33,059
Total assets before inter-segment eliminations	14,633,566	15,969,807
Less: inter-segment eliminations	(327,504)	(634,607)
Total	14,306,062	15,335,200

2022	Net interest income		Provision for credit (losses) recoveries	Non-interest income	Net revenue before gains and losses	Gains and losses	Total net revenue	Total expenses	Net income
	Customer	Inter-segment							
Year ended December 31									
Bermuda	165,330	(3,388)	(1,226)	87,855	248,571	22	248,593	188,676	59,917
Cayman	113,301	2,593	(573)	66,696	182,017	(19)	181,998	62,120	119,878
Channel Islands and the UK	64,928	795	(597)	40,485	105,611	1,503	107,114	73,955	33,159
Other	25	—	—	29,425	29,450	16	29,466	28,400	1,066
Total before eliminations	343,584	—	(2,396)	224,461	565,649	1,522	567,171	353,151	214,020
Inter-segment eliminations	—	—	—	(17,874)	(17,874)	—	(17,874)	(17,874)	—
Total	343,584	—	(2,396)	206,587	547,775	1,522	549,297	335,277	214,020

2021	Net interest income		Provision for credit (losses) recoveries	Non-interest income	Net revenue before gains and losses	Gains and losses	Total net revenue	Total expenses	Net income
	Customer	Inter-segment							
Year ended December 31									
Bermuda	147,295	(1,304)	2,206	84,641	232,838	880	233,718	186,806	46,912
Cayman	89,757	1,241	1,415	58,058	150,471	213	150,684	58,945	91,739
Channel Islands and the UK	62,752	63	(493)	45,294	107,616	(2,454)	105,162	81,654	23,508
Other	3	—	—	27,549	27,552	—	27,552	27,043	509
Total before eliminations	299,807	—	3,128	215,542	518,477	(1,361)	517,116	354,448	162,668
Inter-segment eliminations	—	—	—	(17,435)	(17,435)	—	(17,435)	(17,435)	—
Total	299,807	—	3,128	198,107	501,042	(1,361)	499,681	337,013	162,668

2020	Net interest income		Provision for credit (losses) recoveries	Non-interest income	Net revenue before gains and losses	Gains and losses	Total net revenue	Total expenses	Net income
	Customer	Inter-segment							
Year ended December 31									
Bermuda	158,790	778	(8,750)	85,216	236,034	1,970	238,004	192,781	45,223
Cayman	94,211	1,149	483	49,294	145,137	491	145,628	62,605	83,023
Channel Islands and the UK	64,591	(1,927)	(224)	40,698	103,138	(1,238)	101,900	82,057	19,843
Other	7	—	—	14,384	14,391	(1)	14,390	15,262	(872)
Total before eliminations	317,599	—	(8,491)	189,592	498,700	1,222	499,922	352,705	147,217
Inter-segment eliminations	—	—	—	(5,733)	(5,733)	—	(5,733)	(5,733)	—
Total	317,599	—	(8,491)	183,859	492,967	1,222	494,189	346,972	147,217

Note 16: Derivative instruments and risk management

The Bank uses derivatives for risk management purposes and to meet the needs of its customers. The Bank's derivative contracts principally involve over-the-counter ("OTC") transactions that are negotiated privately between the Bank and the counterparty to the contract and include interest rate contracts and foreign exchange contracts.

The Bank may pursue opportunities to reduce its exposure to credit losses on derivatives by entering into International Swaps and Derivatives Association master agreements ("ISDAs"). Depending on the nature of the derivative transaction, bilateral collateral arrangements may be used, as well. When the Bank is engaged in more than one outstanding derivative transaction with the same counterparty, and also has a legally enforceable master netting agreement with that counterparty, the net marked-to-market exposure represents the netting of the positive and negative exposures with that counterparty. When there is a net negative exposure, the Bank regards its credit exposure to the counterparty as being zero. The net marked-to-market position with a particular counterparty represents a reasonable measure of credit risk when there is a legally enforceable master netting agreement between the Bank and that counterparty.

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Certain of these agreements contain credit risk-related contingent features in which the counterparty has the option to accelerate cash settlement of the Bank's net derivative liabilities with the counterparty in the event the Bank's credit rating falls below specified levels or the liabilities reach certain levels.

All derivative financial instruments, whether designated as hedges or not, are recorded on the consolidated balance sheets at fair value within other assets or other liabilities. These amounts include the effect of netting. The accounting for changes in the fair value of a derivative in the consolidated statements of operations depends on whether the contract has been designated as a hedge and qualifies for hedge accounting.

Notional Amounts

The notional amounts are not recorded as assets or liabilities on the consolidated balance sheets as they represent the face amount of the contract to which a rate or price is applied to determine the amount of cash flows to be exchanged. Notional amounts represent the volume of outstanding transactions and do not represent the potential gain or loss associated with market risk or credit risk of such instruments. Credit risk is limited to the positive fair value of the derivative instrument, which is significantly less than the notional amount.

Fair Value

Derivative instruments, in the absence of any compensating up-front cash payments, generally have no market value at inception. They obtain value, positive or negative, as relevant interest rates, exchange rates, equity or commodity prices or indices change. The potential for derivatives to increase or decrease in value as a result of the foregoing factors is generally referred to as market risk. Market risk is managed within clearly defined parameters as prescribed by senior management of the Bank. The fair value is defined as the profit or loss associated with replacing the derivative contracts at prevailing market prices.

Risk Management Derivatives

The Bank enters into interest derivative contracts as part of its overall interest rate risk management strategy to minimize significant unplanned fluctuations in earnings that are caused by interest rate volatility. The Bank's goal is to manage interest rate sensitivity by modifying the repricing or maturity characteristics of certain consolidated balance sheet assets and liabilities so that movements in interest rates do not adversely affect the net interest margin. Derivative instruments that are used as part of the Bank's risk management strategy include interest rate swap contracts that have indices related to the pricing of specific consolidated balance sheet assets and liabilities. Interest rate swaps generally involve the exchange of fixed and variable-rate interest payments between two parties, based on a common notional principal amount and maturity date. The Bank uses foreign currency derivative instruments to hedge its exposure to foreign currency risk. Certain hedging relationships are formally designated and qualify for hedge accounting as fair value or net investment hedges. Risk management derivatives comprise fair value hedges, net investment hedges and derivatives not formally designated as hedges as described below.

Fair value hedges include designated currency swaps that are used to minimize the Bank's exposure to variability in the fair value of AFS investments due to movements in foreign exchange rates. The effective portion of changes in the fair value of the hedged items attributable to foreign exchange rates is recognized in current year earnings consistent with the related change in fair value of the hedging instrument. For fair value hedges, hedging effectiveness of the hedged item and the hedging instrument are assessed and managed at inception and on an ongoing basis using a partial-term method.

Net investment hedges include designated currency swaps and qualifying non-derivative instruments and are used to minimize the Bank's exposure to variability in the foreign currency translation of net investments in foreign operations. The effective portion of changes in the fair value of the hedging instrument is recognized in AOCIL consistent with the related translation gains and losses of the hedged net investment. For net investment hedges, all critical terms of the hedged item and the hedging instrument are matched at inception and on an ongoing basis to minimize the risk of hedge ineffectiveness.

For derivatives designated as net investment hedges, the Bank follows the method based on changes in spot exchange rates. Accordingly:

- The change in the fair value of the derivative instrument that is reported in AOCIL (i.e., the effective portion) is determined by the changes in spot exchange rates.
- The change in the fair value of the derivative instrument attributable to changes in the difference between the forward rate and spot rate are excluded from the measure of the hedge ineffectiveness and that difference is reported directly in the consolidated statements of operations under foreign exchange revenue.

Amounts recorded in AOCIL are reclassified to earnings only upon the sale or substantial liquidation of an investment in a foreign subsidiary.

For foreign-currency-denominated debt instruments that are designated as hedges of net investments in foreign operations, the translation gain or loss that is recorded in AOCIL is based on the spot exchange rate between the reporting currency of the Bank and the functional currency of the respective subsidiary. See "Note 23: Accumulated other comprehensive income (loss)" for details on the amount recognized into AOCIL during the current period from translation gain or loss.

Derivatives not formally designated as hedges are entered into to manage the foreign exchange risk of the Bank's exposure. Changes in the fair value of derivative instruments not formally designated as hedges are recognized in foreign exchange revenue.

Client service derivatives

The Bank enters into foreign exchange contracts primarily to meet the foreign exchange needs of its customers. Foreign exchange contracts are agreements to exchange specific amounts of currencies at a future date at a specified rate of exchange. Changes in the fair value of client services derivative instruments are recognized in foreign exchange revenue.

The following table shows the aggregate notional amounts of derivative contracts outstanding listed by type and respective gross positive or negative fair values and classified by those used for risk management (sub-classified as hedging and those that do not qualify for hedge accounting), client services and credit derivatives. Fair value of derivatives is recorded in the consolidated balance sheets in other assets and other liabilities. Gross positive fair values are recorded in other assets and gross negative fair values are recorded in other liabilities, subject to netting when master netting agreements are in place.

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December 31, 2022	Derivative instrument	Number of contracts	Notional amounts	Gross positive fair value	Gross negative fair value	Net fair value
Risk management derivatives						
Net investment hedges	Currency swaps	1	5,207	—	(215)	(215)
Fair value hedges	Currency swaps	4	130,751	2,714	(191)	2,523
Derivatives not formally designated as hedging instruments	Currency swaps	63	1,884,169	8,052	(10,269)	(2,217)
Subtotal risk management derivatives			2,020,127	10,766	(10,675)	91
Client services derivatives	Spot and forward foreign exchange	160	312,772	2,401	(2,237)	164
Total derivative instruments			2,332,899	13,167	(12,912)	255

December 31, 2021	Derivative instrument	Number of contracts	Notional amounts	Gross positive fair value	Gross negative fair value	Net fair value
Risk management derivatives						
Net investment hedges	Currency swaps	4	61,641	1,071	(163)	908
Fair value hedges	Currency swaps	4	174,169	1,216	(2,535)	(1,319)
Derivatives not formally designated as hedging instruments	Currency swaps	36	1,552,733	14,538	(9,566)	4,972
Subtotal risk management derivatives			1,788,543	16,825	(12,264)	4,561
Client services derivatives	Spot and forward foreign exchange	125	331,837	1,138	(1,003)	135
Total derivative instruments			2,120,380	17,963	(13,267)	4,696

In addition to the above, as at December 31, 2022 foreign denominated deposits of £235.5 million (December 31, 2021: £192.3 million) and CHF 0.4 million (December 31, 2021: CHF 0.4 million) were designated as a hedge of foreign exchange risk associated with the net investment in foreign operations.

We manage derivative exposure by monitoring the credit risk associated with each counterparty using counterparty specific credit risk limits, using master netting arrangements where appropriate and obtaining collateral. The Bank elected to offset in the consolidated balance sheets certain gross derivative assets and liabilities subject to netting agreements.

The Bank also elected not to offset certain derivative assets or liabilities and all collateral received or paid that the Bank or the counterparties could legally offset in the event of default. In the tables below, these positions are deducted from the net fair value presented in the consolidated balance sheets in order to present the net exposures. The collateral values presented in the following table are limited to the related net derivative asset or liability balance and, accordingly, do not include excess collateral received or paid.

December 31, 2022	Gross fair value recognized	Less: offset applied under master netting agreements	Net fair value presented in the consolidated balance sheets	Less: positions not offset in the consolidated balance sheets		Net exposures
				Gross fair value of derivatives	Cash collateral received / paid	
Derivative assets						
Spot and forward foreign exchange and currency swaps	13,167	(6,658)	6,509	—	(9)	6,500
Derivative liabilities						
Spot and forward foreign exchange and currency swaps	12,912	(6,658)	6,254	—	(352)	5,902
Net positive fair value			255			

December 31, 2021	Gross fair value recognized	Less: offset applied under master netting agreements	Net fair value presented in the consolidated balance sheets	Less: positions not offset in the consolidated balance sheets		Net exposures
				Gross fair value of derivatives	Cash collateral received / paid	
Derivative assets						
Spot and forward foreign exchange and currency swaps	17,963	(9,843)	8,120	—	—	8,120
Derivative liabilities						
Spot and forward foreign exchange and currency swaps	13,267	(9,843)	3,424	—	(818)	2,606
Net positive fair value			4,696			

The Bank of N.T. Butterfield & Son Limited
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The following tables show the location and amount of gains (losses) recorded in either the consolidated statements of operations or consolidated statements of comprehensive income on derivative instruments outstanding.

Derivative instrument	Consolidated statements of operations line item	December 31, 2022	Year ended	
			December 31, 2021	December 31, 2020
Spot and forward foreign exchange	Foreign exchange revenue	28	(131)	(191)
Currency swaps, not designated as hedge	Foreign exchange revenue	(7,188)	23,531	(18,854)
Currency swaps - fair value hedges	Foreign exchange revenue	3,842	(5,357)	4,039
Total net gains (losses) recognized in net income		(3,318)	18,043	(15,006)

Derivative instrument	Consolidated statements of comprehensive income line item	December 31, 2022	Year ended	
			December 31, 2021	December 31, 2020
Currency swaps - net investment hedge	Unrealized net gains (losses) on translation of net investment in foreign operations	(1,123)	5,495	(4,469)
Total net gains (losses) recognized in comprehensive income		(1,123)	5,495	(4,469)

Note 17: Fair value measurements

The following table presents the financial assets and liabilities that are measured at fair value on a recurring basis. Management classifies these items based on the type of inputs used in their respective fair value determination as described in "Note 2: Significant accounting policies".

Management reviews the price of each security monthly, comparing market values to expectations and to the prior month's price. Management's expectations are based upon knowledge of prevailing market conditions and developments relating to specific issuers and/or asset classes held in the investment portfolio. Where there are unusual or significant price movements, or where a certain asset class has performed out-of-line with expectations, the matter is reviewed by management.

Financial instruments in Level 1 include US and UK Government Treasury notes.

Financial instruments in Level 2 include government debt securities, mortgage-backed securities and other asset-backed securities, forward foreign exchange contracts and mutual funds not actively traded.

Financial instruments in Level 3 include asset-backed securities for which the market is relatively illiquid and for which information about actual trading prices is not readily available.

During the year ended December 31, 2022, there were no transfers between Level 1 and Level 2. There was a transfer out of Level 3 into Level 2 due to increased price observability. There were no transfers between Level 1 and Level 2 or Level 2 and Level 3 during the year ended December 31, 2021.

December 31, 2022			Total carrying amount / fair value	December 31, 2021			Total carrying amount / fair value
Fair value				Fair value			
Level 1	Level 2	Level 3		Level 1	Level 2	Level 3	

Items that are recognized at fair value on a recurring basis:

Financial assets

Equity securities								
Mutual funds	—	236	—	236	—	222	—	222
Total equity securities	—	236	—	236	—	222	—	222

Available-for-sale investments

US government and federal agencies	838,938	873,838	—	1,712,776	823,809	2,319,815	—	3,143,624
Non-US governments debt securities	229,071	22,392	—	251,463	267,200	22,393	—	289,593
Asset-backed securities - Student loans	—	5,626	—	5,626	—	—	13,174	13,174
Residential mortgage-backed securities	—	19,000	—	19,000	—	27,339	—	27,339
Total available-for-sale	1,068,009	920,856	—	1,988,865	1,091,009	2,369,547	13,174	3,473,730
Other assets - Derivatives	—	6,509	—	6,509	—	8,120	—	8,120

Financial liabilities

Other liabilities - Derivatives	—	6,254	—	6,254	—	3,424	—	3,424
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The Bank of N.T. Butterfield & Son Limited
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Level 3 Reconciliation

The Level 3 financial instrument, shown as Asset-backed securities - Student loans in the above table, is a federal family education loan program guaranteed student loan security and was valued using a non-binding quote from an external security pricing service. During the year ended December 31, 2022, this instrument was transferred to Level 2 due to increased price observability.

The table below summarizes realized and unrealized gains and losses for Level 3 assets still held at the reporting date.

	December 31, 2022	December 31, 2021	December 31, 2020
	Available- for-sale investments	Available- for-sale investments	Available- for-sale investments
Carrying amount at beginning of year	13,174	12,945	12,891
Proceeds from sales, paydowns and maturities	(7,631)	—	—
Change in unrealized gains (losses) recognized in other comprehensive income	102	229	54
Realized and unrealized gains recognized in net income	(19)	—	—
Transfers in (out of) Level 3 out of (into) Level 2 - AFS	(5,626)	—	—
Carrying amount at end of year	—	13,174	12,945
Cumulative gain (loss) recognized in other comprehensive income	(14)	(116)	(345)

Items Other Than Those Recognized at Fair Value on a Recurring Basis:

	Level	December 31, 2022			December 31, 2021		
		Carrying amount	Fair value	Appreciation / (depreciation)	Carrying amount	Fair value	Appreciation / (depreciation)
Financial assets							
Cash and cash equivalents	Level 1	2,100,787	2,100,787	—	2,179,833	2,179,833	—
Securities purchased under agreements to resell	Level 2	59,871	59,871	—	96,107	96,107	—
Short-term investments	Level 1	884,478	884,478	—	1,198,918	1,198,918	—
Investments held-to-maturity	Level 2	3,738,080	3,197,508	(540,572)	2,763,344	2,786,112	22,768
Loans, net of allowance for credit losses	Level 2	5,096,430	5,049,570	(46,860)	5,240,670	5,265,049	24,379
Other real estate owned ¹	Level 2	800	800	—	691	691	—
Financial liabilities							
Term deposits	Level 2	3,107,248	3,108,511	(1,263)	2,944,946	2,948,625	(3,679)
Long-term debt	Level 2	172,289	177,919	(5,630)	171,876	158,993	12,883

¹ The current carrying value of OREO is adjusted to fair value only when there is devaluation below carrying value.

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Note 18: Interest rate risk

The following tables set out the assets, liabilities and shareholders' equity on the date of the earlier of contractual maturity, expected maturity or repricing date. Use of these tables to derive information about the Bank's interest rate risk position is limited by the fact that customers may choose to terminate their financial instruments at a date earlier than the contractual maturity or repricing date. Examples of this include fixed-rate mortgages, which are shown at contractual maturity but which may pre-pay earlier, and certain term deposits, which are shown at contractual maturity but which may be withdrawn before their contractual maturity subject to prepayment penalties. Investments are shown based on remaining contractual maturities. The remaining contractual principal maturities for mortgage-backed securities (primarily US government agencies) do not consider prepayments. Remaining expected maturities will differ from contractual maturities because borrowers may have the right to prepay obligations before the underlying mortgages mature.

(in \$ millions)	Earlier of contractual maturity or repricing date					Non-interest bearing funds	Total
	Within 3 months	3 to 6 months	6 to 12 months	1 to 5 years	After 5 years		
Assets							
Cash and cash equivalents	2,008	—	—	—	—	93	2,101
Securities purchased under agreement to resell	60	—	—	—	—	—	60
Short-term investments	406	422	56	—	—	—	884
Investments	6	8	179	943	4,592	—	5,728
Loans	2,927	35	166	1,533	406	29	5,096
Other assets	—	—	—	—	—	437	437
Total assets	5,407	465	401	2,476	4,998	559	14,306
Liabilities and shareholders' equity							
Shareholders' equity	—	—	—	—	—	865	865
Demand deposits	6,819	25	—	—	—	3,040	9,884
Term deposits	2,126	457	437	87	—	—	3,107
Other liabilities	—	—	—	—	—	278	278
Long-term debt	—	75	—	97	—	—	172
Total liabilities and shareholders' equity	8,945	557	437	184	—	4,183	14,306
Interest rate sensitivity gap	(3,538)	(92)	(36)	2,292	4,998	(3,624)	—
Cumulative interest rate sensitivity gap	(3,538)	(3,630)	(3,666)	(1,374)	3,624	—	—

(in \$ millions)	Earlier of contractual maturity or repricing date					Non-interest bearing funds	Total
	Within 3 months	3 to 6 months	6 to 12 months	1 to 5 years	After 5 years		
Assets							
Cash and cash equivalents	2,064	—	—	—	—	116	2,180
Securities purchased under agreement to resell	96	—	—	—	—	—	96
Short-term investments	842	252	105	—	—	—	1,199
Investments	14	9	14	1,173	5,027	—	6,237
Loans	4,208	22	91	705	182	33	5,241
Other assets	—	—	—	—	—	382	382
Total assets	7,224	283	210	1,878	5,209	531	15,335
Liabilities and shareholders' equity							
Shareholders' equity	—	—	—	—	—	977	977
Demand deposits	8,077	—	27	—	—	2,821	10,925
Term deposits	1,658	587	602	98	—	—	2,945
Other liabilities	—	—	—	—	—	316	316
Long-term debt	—	—	—	172	—	—	172
Total liabilities and shareholders' equity	9,735	587	629	270	—	4,114	15,335
Interest rate sensitivity gap	(2,511)	(304)	(419)	1,608	5,209	(3,583)	—
Cumulative interest rate sensitivity gap	(2,511)	(2,815)	(3,234)	(1,626)	3,583	—	—

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Note 19: Long-term debt

On June 27, 2005, the Bank issued US \$150 million of Subordinated Lower Tier II capital notes. The notes were issued at par in two tranches, namely US \$90 million in Series A notes due 2015, which were redeemed at face value in January 2014, and US \$60 million in Series B notes due 2020. The issuance was by way of private placement with US institutional investors. The notes were listed on the BSX in the specialist debt securities category. The Series B notes paid a fixed coupon of 5.11% until July 2, 2015 when they became redeemable in whole at the Bank's option. The Series B notes were priced at a spread of 1.10% over the 10-year US Treasury yield. During September 2011, the Bank repurchased \$15 million of the outstanding 5.11% 2005 Series B notes and the balance of \$45 million matured on July 2, 2020.

On May 27, 2008, the Bank issued US \$78 million of Subordinated Lower Tier II capital notes. The notes were issued at par and in two tranches, namely US \$53 million in Series A notes due 2018, which were redeemed at face value in May 2013 and US \$25 million in Series B notes due 2023. The issuance was by way of private placement with US institutional investors. The notes were listed on the BSX in the specialist debt securities category. The proceeds of the issue were used to repay the entire amount of the US \$78 million outstanding subordinated notes redeemed in May 2008. The Series B notes paid a fixed coupon of 8.44% until May 27, 2018 when they became redeemable in whole at the Bank's option. The Series B notes were priced at a spread of 4.51% over the 10-year US Treasury yield and were redeemed at face value in November 2020.

On May 24, 2018, the Bank issued US \$75 million of Subordinated Lower Tier II capital notes. The notes were issued at par and due on June 1, 2028. The issuance was by way of a registered offering with US institutional investors. The notes are listed on the BSX in the specialist debt securities category. The proceeds of the issue were used, among others, to repay the entire amount of the US \$47 million outstanding subordinated notes series 2003-B. The notes issued pay a fixed coupon of 5.25% until June 1, 2023 when they become redeemable in whole at the option of the Bank. The notes were priced at a spread of 2.27% over the 10-year US Treasury yield. The Bank incurred \$1.8 million of costs directly related to the issuance of these capital notes. These costs have been capitalized directly against the carrying value of these notes on the balance sheet, and will be amortized over the life of the notes.

On June 11, 2020, the Bank issued US \$100 million of Subordinated Lower Tier II capital notes. The notes were issued at par and due on June 15, 2030. The issuance was by way of a registered offering with US institutional investors. The notes are listed on the BSX in the specialist debt securities category. The proceeds of the issue were used, among others, to repay the entire amount of the US \$45 million outstanding subordinated notes series 2005-B which matured on July 2, 2020. The notes issued pay a fixed coupon of 5.25% until June 15, 2025 when they become redeemable in whole at the option of the Bank. The notes were priced at a spread of 4.43% over the 10-year US Treasury yield. The Bank incurred \$2.3 million of costs directly related to the issuance of these capital notes. These costs have been capitalized directly against the carrying value of these notes on the balance sheet, and will be amortized over the life of the notes.

No interest was capitalized during the years ended December 31, 2022, 2021 and 2020.

In the event the Bank would be in a position to redeem long-term debt, priority would go to the redemption of the higher interest-bearing Series, subject to availability relative to the earliest date the Series is redeemable at the Bank's option.

The following table presents the contractual maturity and interest payments for long-term debt issued by the Bank as at December 31, 2022. The interest payments are calculated until contractual maturity using the current LIBOR and Secured Overnight Financing Rate ("SOFR").

Long-term debt	Earliest date redeemable at the Bank's option	Contractual maturity date	Interest rate until date redeemable	Interest rate from earliest date redeemable to contractual maturity	Principal Outstanding	Interest payments until contractual maturity		
						Within 1 year	1 to 5 years	After 5 years
Bermuda								
2018 issuance	June 1, 2023	June 1, 2028	5.25 %	3 months US\$ LIBOR + 2.255%	75,000	4,646	21,374	2,677
2020 issuance	June 15, 2025	June 15, 2030	5.25 %	3 months US\$ SOFR + 5.060%	100,000	5,250	31,613	23,738
Total					175,000	9,896	52,987	26,415
Unamortized debt issuance costs					(2,711)			
Long-term debt less unamortized debt issuance costs					172,289			

Note 20: Earnings per share

Earnings per share have been calculated using the weighted average number of common shares outstanding during the year after deduction of the shares held as treasury stock. The dilutive effect of share-based compensation plans was calculated using the treasury stock method, whereby the proceeds received from the exercise of share-based awards are assumed to be used to repurchase outstanding shares, using the average market price of the Bank's shares for the year. Numbers of shares are expressed in thousands.

During the year ended December 31, 2022, there were no options to purchase common shares outstanding (December 31, 2021: 0.0 million, December 31, 2020: 0.1 million). During the year ended December 31, 2022, the average number of outstanding awards of unvested common shares was 1.1 million (December 31, 2021: 1.0 million, December 31, 2020: 0.9 million). Only awards for which the sum of 1) the expense that will be recognized in the future (i.e., the unrecognized expense) and 2) its exercise price, if any, was lower than the average market price of the Bank's common shares were considered dilutive and, therefore, included in the computation of diluted earnings per share.

An award's unrecognized expense is also considered to be the proceeds the employees would need to pay to purchase accelerated vesting of the awards. For purposes of calculating dilution, such proceeds are assumed to be used by the Bank to buy back common shares at the average market price. The weighted-average number of outstanding awards, net of the assumed weighted-average number of common shares bought back, is included in the number of diluted participating shares.

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	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Net income	214,020	162,668	147,217
Basic Earnings Per Share			
Weighted average number of common shares issued	50,214	50,145	51,128
Weighted average number of common shares held as treasury stock	(619)	(619)	(619)
Weighted average number of common shares (in thousands)	49,595	49,526	50,509
Basic Earnings Per Share	4.32	3.28	2.91
Diluted Earnings Per Share			
Weighted average number of common shares	49,595	49,526	50,509
Net dilution impact related to options to purchase common shares	—	—	55
Net dilution impact related to awards of unvested common shares	265	349	286
Weighted average number of diluted common shares (in thousands)	49,860	49,875	50,850
Diluted Earnings Per Share	4.29	3.26	2.90

Note 21: Share-based payments

The common shares transferred to employees under all share-based payments are either taken from the Bank's common treasury shares or from newly issued shares. All share-based payments are settled by the ultimate parent company which, pursuant to Bermuda law, is not taxed on income. There are no income tax benefits in relation to the issue of such shares as a form of compensation.

In conjunction with the 2010 capital raise, the Board of Directors approved the 2010 Omnibus Plan (the "2010 Plan"). Under the 2010 Plan, 5% of the Bank's fully diluted common shares, equal to approximately 2.95 million shares, were initially available for grant to certain officers in the form of stock options or unvested share awards. Both types of awards are detailed below. In 2012 and 2016, the Board of Directors approved an increase to the equivalent number of shares allowed to be granted under the 2010 Plan to 5.0 million and 7.5 million shares, respectively.

In May 2020, the Board of Directors approved the 2020 Omnibus Plan (the "2020 Plan") which replaces the 2010 Plan. Under the 2020 Plan, 3.0 million shares are initially available for grant to employees in the form of stock options or unvested share awards. Both types of awards are detailed below.

Stock Option Awards

2010 and 2020 Plans

Under the 2010 and 2020 Plans, options are awarded to Bank employees and executive management, based on predetermined vesting conditions that entitle the holder to purchase one common share at a subscription price usually equal to the price of the most recently traded common share when granted and have a term of 10 years. The subscription price is reduced for all special dividends declared by the Bank. Stock option awards granted under the 2010 and 2020 Plans vest based on two specific types of vesting conditions, i.e., time and performance conditions, as detailed below:

Time vesting condition

50% of each option award was granted in the form of time vested options and vested 25% on each of the second, third, fourth and fifth anniversaries of the effective grant date.

In addition to the time vesting conditions noted above, the options will generally vest immediately:

- by reason of the employee's death or disability,
- upon termination, by the Bank, of the holder's employment, unless if in relation with the holder's misconduct, or
- in limited circumstances and specifically approved by the Board, as stipulated in the holder's employment contract.

In the event of the employee's resignation, any unvested portion of the awards shall generally be forfeited and any vested portion of the options shall generally remain exercisable during the 90-day period following the termination date or, if earlier, until the expiration date, and any vested portion of the options not exercised as of the expiration of such period shall be forfeited without any consideration therefore.

Performance vesting condition

50% of each option award was granted in the form of performance options and would vest (partially or fully) on a "valuation event" date (the date that any of the March 2, 2010 new investors transfers at least 5% of the total number of common shares or the date that there is a change in control and any of the new investors realize a predetermined multiple of invested capital ("MOIC")). On September 21, 2016, it was determined that a valuation event occurred during which a new investor realized a MOIC of more than 200% of the original invested capital of \$12.09 per share and accordingly, all outstanding unvested performance options vested.

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Changes in Outstanding Stock Option Plans

	Number of shares transferable upon exercise (thousands)	Weighted average exercise price (\$)	Weighted average remaining life (years)	Aggregate intrinsic value (\$ thousands)
	2010 Stock Option Plan	2010 Stock Option Plan	2010 Stock Option Plan	
Year ended December 31, 2020				
Outstanding at beginning of year	159	12.07		
Exercised	(143)	12.13		2,192
Forfeitures and cancellations	(16)	11.50		
Outstanding at end of year	—	—	0.00	—
Vested and exercisable at end of year	—	—	0.00	—

There were no stock options outstanding as at December 31, 2022 and December 31, 2021.

Share-Based Incentive Programs

Recipients of unvested share awards are entitled to the related common shares at no cost, at the time the award vests. Recipients of unvested shares may be entitled to receive additional unvested shares having a value equal to the cash dividends that would have been paid had the unvested shares been issued and vested. Such additional unvested shares granted as dividend equivalents are subject to the same vesting schedule and conditions as the underlying unvested shares.

Unvested shares subject only to the time vesting condition generally vest upon retirement, death, disability or upon termination, by the Bank, of the holder's employment unless if in connection with the holder's misconduct. Unvested shares subject to both time vesting and performance vesting conditions remain outstanding and unvested upon retirement and will vest only if the performance conditions are met. Unvested shares can also vest in limited circumstances and if specifically approved by the Board, as stipulated in the holder's employment contract. In all other circumstances, unvested shares are generally forfeited when employment ends.

The grant date weighted average fair value of unvested share awards granted in the years ended December 31, 2022, 2021 and 2020 was \$35.05, \$33.26 and \$33.35, respectively. The Bank expects to settle these awards by issuing new shares.

Employee Deferred Incentive Program ("EDIP")

Under the Bank's EDIP, shares are awarded to Bank employees and executive management based on the time vesting condition, which states that the shares will vest equally over a three-year period from the effective grant date.

Executive Long-Term Incentive Share Program ("ELTIP")

Under the Bank's ELTIP, performance shares as well as time-vesting shares were awarded to executive management. The performance shares will generally vest upon the achievement of certain performance targets in the three-year period from the effective grant date. The time-vesting shares will generally vest over the three-year period from the effective grant date.

Employee Share Purchase Plan ("ESPP")

The Bank's ESPP was approved in July 2021 and registered in November 2021. The first offering period started in May 2022. Under the Bank's ESPP, eligible employees may elect to contribute up to 15% of their regular compensation toward the purchase of Bank's shares at a 10% discount from market price on the closing date of each offering period. The ESPP specifies two consecutive six month offering periods per year. In the case of termination of employment or voluntary partial or full withdrawal from the plan, the related current offering period ESPP contributions are refunded to the employee and thus cannot be used to purchase shares under the ESPP. During the year ended December 31, 2022, 10,143 shares were issued under the ESPP.

Changes in Outstanding ELTIP and EDIP awards (in thousands of shares transferable upon vesting)

	Year ended					
	December 31, 2022		December 31, 2021		December 31, 2020	
	EDIP	ELTIP	EDIP	ELTIP	EDIP	ELTIP
Outstanding at beginning of year	297	704	364	658	251	618
Granted	486	280	118	283	245	209
Vested (fair value in 2022: \$17.3 million, 2021: \$13.9 million; 2020: \$9.6 million)	(162)	(279)	(183)	(237)	(129)	(162)
Forfeitures (resignations, retirements, redundancies)	—	—	(2)	—	(3)	(7)
Outstanding at end of year	621	705	297	704	364	658

Share-based Compensation Cost Recognized in Net Income

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
	EDIP and ELTIP	EDIP and ELTIP	EDIP and ELTIP
Cost recognized in net income	16,215	14,539	14,608

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Year ended

Unrecognized Share-based Compensation Cost	December 31, 2022		December 31, 2021	
	Unrecognized cost	Weighted average years over which it is expected to be recognized	Unrecognized cost	Weighted average years over which it is expected to be recognized
EDIP	14,234	3.35	4,896	1.45
ELTIP				
Time vesting shares	—	0.00	17	0.12
Performance vesting shares	10,232	1.75	8,840	1.76
Total unrecognized expense	24,466		13,753	

Note 22: Share repurchase programs

From time to time, the Bank may seek to repurchase and retire equity securities of the Bank, through cash purchase, privately negotiated transactions, or otherwise. Such transactions, if any, depend on prevailing market conditions, liquidity and capital requirements, contractual restrictions, and other factors.

Common Share Repurchase Program

On December 6, 2018, the Board approved, with effect from December 10, 2018 to February 29, 2020, a common share repurchase program, authorizing the purchase of up to 2.5 million common shares.

On December 2, 2019, the Board approved a new \$125 million common share repurchase program, authorizing the purchase of up to 3.5 million common shares through to February 28, 2021. The new program came into effect on December 20, 2019 following the completion of the previous program.

On February 10, 2021, the Board approved a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through to February 28, 2022.

On February 14, 2022, the Board approved a new common share repurchase program, authorizing the purchase of up to 2.0 million common shares through to February 28, 2023.

On February 13, 2023, the Board approved a new common share repurchase program, authorizing the purchase of up to 3.0 million common shares through to February 29, 2024.

In the year ended December 31, 2022, the Bank repurchased and retired 102,000 shares.

Common share repurchases	Year ended December 31		
	2022	2021	2020
Acquired number of shares (to the nearest 1)	102,000	534,828	3,452,000
Average cost per common share	38.21	36.93	25.10
Total cost (in US dollars)	3,897,268	19,753,336	86,639,889

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Note 23: Accumulated other comprehensive income (loss)

Year ended December 31, 2022	Unrealized net gains (losses) on translation of net investment in foreign operations	Unrealized net gains (losses) on HTM investments	Unrealized net gains (losses) on AFS investments	Employee benefit plans adjustments			Total AOCIL
				Pension	Post- retirement healthcare	Subtotal - employee benefits plans	
Balance at beginning of year	(20,913)	91	(21,982)	(56,400)	(25,713)	(82,113)	(124,917)
Transfer of AFS investments to HTM investments	—	(99,143)	99,143	—	—	—	—
Other comprehensive income (loss), net of taxes	(4,787)	7,840	(297,506)	8,495	33,423	41,918	(252,535)
Balance at end of year	(25,700)	(91,212)	(220,345)	(47,905)	7,710	(40,195)	(377,452)

Year ended December 31, 2021	Unrealized net gains (losses) on translation of net investment in foreign operations	Unrealized net gains (losses) on HTM investments	Unrealized net gains (losses) on AFS investments	Employee benefit plans adjustments			Total AOCIL
				Pension	Post- retirement healthcare	Subtotal - employee benefits plans	
Balance at beginning of year	(21,065)	(60)	72,779	(72,255)	(29,079)	(101,334)	(49,680)
Other comprehensive income (loss), net of taxes	152	151	(94,761)	15,855	3,366	19,221	(75,237)
Balance at end of year	(20,913)	91	(21,982)	(56,400)	(25,713)	(82,113)	(124,917)

Year ended December 31, 2020	Unrealized net gains (losses) on translation of net investment in foreign operations	Unrealized net gains (losses) on HTM investments	Unrealized net gains (losses) on AFS investments	Employee benefit plans adjustments			Total AOCIL
				Pension	Post- retirement healthcare	Subtotal - employee benefits plans	
Balance at beginning of year	(20,818)	(725)	11,808	(66,312)	(11,050)	(77,362)	(87,097)
Other comprehensive income (loss), net of taxes	(247)	665	60,971	(5,943)	(18,029)	(23,972)	37,417
Balance at end of year	(21,065)	(60)	72,779	(72,255)	(29,079)	(101,334)	(49,680)

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Net Change of AOCIL Components

Year ended

	Line item in the consolidated statements of operations, if any	December 31, 2022	December 31, 2021	December 31, 2020
Net unrealized gains (losses) on translation of net investment in foreign operations adjustments				
Foreign currency translation adjustments	N/A	(38,925)	(3,129)	9,991
Gains (losses) on net investment hedge	N/A	34,138	3,281	(10,238)
Net change		(4,787)	152	(247)
Held-to-maturity investment adjustments				
Net unamortized gains (losses) transferred from AFS	N/A	(99,143)	—	—
Amortization of net gains (losses) to net income	Interest income on investments	7,840	151	665
Net change		(91,303)	151	665
Available-for-sale investment adjustments				
Gross unrealized gains (losses)	N/A	(298,768)	(94,960)	62,191
Net unrealized (gains) losses transferred to HTM	N/A	99,143	—	—
Transfer of realized (gains) losses to net income	Net realized gains (losses) on AFS investments	19	239	(1,220)
Foreign currency translation adjustments of related balances	N/A	1,243	(40)	—
Net change		(198,363)	(94,761)	60,971
Employee benefit plans adjustments				
Defined benefit pension plan				
Net actuarial gain (loss)	N/A	6,218	14,772	(8,363)
Net loss (gain) on settlement reclassified to net income	Net other gains (losses)	(907)	—	—
Prior service credit (cost) arising during the year	N/A	—	(399)	(47)
Amortization of net actuarial (gains) losses	Non-service employee benefits expense	2,218	2,766	2,412
Change in deferred taxes	N/A	—	(1,462)	456
Amortization of prior service (credit) cost	Non-service employee benefits expense	81	(25)	20
Foreign currency translation adjustments of related balances	N/A	885	203	(421)
Net change		8,495	15,855	(5,943)
Post-retirement healthcare plan				
Net actuarial gain (loss)	N/A	31,455	1,163	(18,553)
Amortization of net actuarial (gains) losses	Non-service employee benefits expense	1,444	1,679	—
Amortization of prior service (credit) cost	Non-service employee benefits expense	524	524	524
Net change		33,423	3,366	(18,029)
Other comprehensive income (loss), net of taxes		(252,535)	(75,237)	37,417

Note 24: Capital structure

Authorized Capital

The Bank trades on the New York Stock Exchange under the ticker symbol "NTB" and on the BSX under the symbol "NTB.BH".

The par value of each issued common share and each authorized but unissued common share is BM\$0.01 and the authorized share capital of the Bank comprises 2,000,000,000 common shares of par value BM\$0.01 each, 6,000,000,000 non-voting ordinary shares of par value BM\$0.01 each, 110,200,001 preference shares of par value US\$0.01 each and 50,000,000 preference shares of par value £0.01 each.

Dividends Declared

During the year ended December 31, 2022, the Bank declared and paid cash dividends of \$1.76 (December 31, 2021: \$1.76, December 31, 2020: \$1.76) for each common share as of the related record dates. On February 13, 2023, the Board of Directors declared an interim dividend of \$0.44 per common share to be paid on March 14, 2023 to shareholders of record on February 27, 2023.

The Bank is required to comply with Section 54 of the Companies Act 1981 issued by the Government of Bermuda (the "Companies Act") each time a dividend is declared or paid by the Bank and also obtain a letter of no objection from the BMA pursuant to the Banks and Deposit Companies Act 1999 for any dividends declared. The Bank has complied with Section 54 and has obtained the BMA's letter of no objection for all dividends declared during the periods presented.

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Regulatory Capital

The Bank's regulatory capital is determined in accordance with current Basel III guidelines as issued by the BMA. The Bank is fully compliant with all regulatory capital requirements to which it is subject, and it maintains capital ratios in excess of regulatory minimums as at December 31, 2022 and 2021. The following table sets forth the Bank's capital adequacy in accordance with the Basel III framework:

	December 31, 2022		December 31, 2021	
	Actual	Regulatory minimum	Actual	Regulatory minimum
Capital				
CET 1 capital	983,342	N/A	896,263	N/A
Tier 1 capital	983,342	N/A	896,263	N/A
Tier 2 capital	183,640	N/A	183,998	N/A
Total capital	1,166,982	N/A	1,080,261	N/A
Risk Weighted Assets	4,843,370	N/A	5,101,474	N/A
Leverage Ratio Exposure Measure	14,774,309	N/A	15,921,624	N/A
Capital Ratios (%)				
CET 1 capital	20.3 %	10.0 %	17.6 %	10.0 %
Tier 1 capital	20.3 %	11.5 %	17.6 %	11.5 %
Total capital	24.1 %	13.5 %	21.2 %	13.5 %
Leverage ratio	6.7 %	5.0 %	5.6 %	5.0 %

Note 25: Income taxes

The Bank is incorporated in Bermuda, and pursuant to Bermuda law is not taxed on either income or capital gains. The Bank's subsidiaries in the Cayman Islands and The Bahamas are not subject to any taxes in their respective jurisdictions on either income or capital gains under current law applicable in the respective jurisdictions. The Bank's subsidiaries in Canada, the United Kingdom, Guernsey, Jersey, Switzerland, Singapore and Mauritius are subject to the tax laws of those jurisdictions.

For the years ended December 31, 2022, 2021, and 2020, the Bank did not record any unrecognized tax benefits or expenses and has no uncertain tax positions as at December 31, 2022, 2021, and 2020.

The Bank records income taxes based on the enacted tax laws and rates applicable in the relevant jurisdictions for the years ended December 31, 2022, 2021, and 2020. For the years ended December 31, 2022, 2021, and 2020, the Bank did not incur any interest or pay any penalties.

Income taxes in consolidated statements of operations	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Current tax expense	3,223	2,818	2,382
Deferred tax (recovery) expense	459	305	(4)
Total tax (benefit) expense	3,682	3,123	2,378

Reconciliation between the Effective Income Tax Rate and the Statutory Income Tax Rate

	Year ended					
	December 31, 2022		December 31, 2021		December 31, 2020	
	\$	%	\$	%	\$	%
Income tax expense in international offices taxed at different rates	4,349	2.0	3,366	2.0	2,695	1.8
Expenses not deductible for tax purposes	283	0.1	408	0.2	299	0.2
Prior year tax adjustments	83	—	(231)	(0.1)	41	—
Effect of change in tax rate	125	0.1	(1,217)	(0.7)	—	—
Change in valuation allowance	(1,364)	(0.6)	585	0.4	(582)	(0.4)
Other - net	206	0.1	212	0.1	(75)	(0.1)
Income tax (benefit) expense at effective tax rate	3,682	1.7	3,123	1.9	2,378	1.6

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Deferred income taxes	December 31, 2022	December 31, 2021
Deferred income tax asset		
Tax loss carried forward	5,863	8,269
Allowance for compensated absence	19	—
Deferred income tax asset before valuation allowance	5,882	8,269
Less: valuation allowance	(3,478)	(4,842)
Deferred income tax asset after valuation allowance	2,404	3,427
Deferred income tax liability		
Fixed assets	(477)	(735)
Allowance for compensated absence	—	(27)
Total deferred income tax liability	(477)	(762)
Net deferred income tax assets	1,927	2,665

Management assesses the available positive and negative evidence to evaluate if sufficient future taxable income will be generated to use the existing deferred tax assets. On the basis of this evaluation, as at December 31, 2022, a valuation allowance of \$3.5 million (December 31, 2021: \$4.8 million) has been recognized to record only the portion of the deferred tax asset that more likely than not will be realized. The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carry-forward period change, or if there are changes in the available positive and negative evidence.

The Bank has net taxable loss carry forwards related to the Bank's international operations of approximately \$27.8 million (December 31, 2021: \$41.4 million). Of these losses available to carry forward, \$27.3 million (December 31, 2021: \$39.9 million) have an indefinite life.

Note 26: Related party transactions

Financing Transactions

Certain directors and executives of the Bank, companies in which they are principal owners and/or members of the board, and trusts in which they are involved, have deposits with the Bank, have loans and/or are guarantors for loans with the Bank. Loans to directors were made in the ordinary course of business at normal credit terms, including interest rate and collateral requirements. Loans to executives may be eligible for preferential rates. All of these loans were considered performing loans as at December 31, 2022 and December 31, 2021. Loan balances with directors and executives of the Bank, companies in which they are principal owners and/or members of the board, and trusts in which they are involved were as follows:

Balance at December 31, 2020	42,391
Net loans issued (repaid) during the year	(40,448)
Effect of changes in the composition of related parties	5,432
Balance at December 31, 2021	7,375
Net loans issued (repaid) during year	(5,362)
Effect of changes in the composition of related parties	18,380
Balance at December 31, 2022	20,393

Consolidated balance sheets	December 31, 2022	December 31, 2021
Deposits	92,806	21,683

Consolidated statement of operations	Year ended December 31		
	2022	2021	2020
Interest and fees on loans	900	1,209	1,444

Certain affiliates of the Bank have loans and deposits with the Bank which were made and are maintained in the ordinary course of business on normal commercial terms. Balances with these parties were as follows:

Consolidated balance sheets	December 31, 2022	December 31, 2021
Loans	10,211	10,489
Deposits	560	441

Consolidated statement of operations	Year ended December 31		
	2022	2021	2020
Interest and fees on loans	669	618	654
Other gains/losses	—	99	742
Total non-interest expense	1,720	1,519	1,431
Other non-interest income	242	—	—

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements
(In thousands of US dollars, unless otherwise stated)

Investments

The Bank held seed investments in Butterfield mutual funds, which were managed by a wholly-owned subsidiary of the Bank. These investments were sold during the year ended December 31, 2021.

As at December 31, 2022, several Butterfield mutual funds which are managed by a wholly owned subsidiary of the Bank, had loan balances and deposit balances held with the Bank. The Bank also earned asset management revenue and custody and other administration services revenue from funds managed by a wholly-owned subsidiary of the Bank and from directors and executives, companies in which they are principal owners and/or members of the board and trusts in which they are involved, as well as other income from other related parties.

Consolidated balance sheets	December 31, 2022	December 31, 2021
Deposits	20,549	22,346

Consolidated statement of operations	Year ended December 31		
	2022	2021	2020
Asset management	7,379	5,217	7,131
Custody and other administration services	839	622	1,108
Other non-interest income	—	6	729

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

Note 27: Condensed financial statements of the parent company only

Condensed financial statements of the Bank of N.T. Butterfield & Son Limited (the ultimate parent company) without consolidation of its subsidiaries were as follows:

The Bank of N.T. Butterfield & Son Limited (parent company only)

Condensed Balance Sheets

(In thousands of US dollars)

	As at	
	December 31, 2022	December 31, 2021
Assets		
Cash and demand deposits with banks - Non-interest-bearing	38,835	41,993
Demand deposits with banks - Interest-bearing	142,213	135,038
Cash equivalents - Interest-bearing	723,323	591,294
Cash and cash equivalents	904,371	768,325
Securities purchased under agreements to resell	59,871	96,107
Short-term investments	80,315	242,691
Investment in securities		
Equity securities at fair value	236	222
Available-for-sale (amortized cost: \$944,746 (2021: 1,419,712))	853,749	1,417,117
Held-to-maturity (fair value: \$1,238,333 (2021: \$1,030,969))	1,421,556	1,011,584
Total investment in securities	2,275,541	2,428,923
Net assets of subsidiaries - Banks	480,297	594,930
Net assets of subsidiaries - Non-banks	1,563	17,091
Loans to third parties, net of allowance for credit losses	1,839,622	1,966,895
Loans to subsidiaries - Banks	—	13,534
Loans to subsidiaries - Non-banks	58,056	61,901
Other assets, including accrued interest, premises, equipment and computer software, equity method investments, receivables from subsidiaries and other real estate owned	242,796	188,263
Total assets	5,942,432	6,378,660
Liabilities		
Deposits		
Non-interest bearing	1,811,455	1,686,985
Interest bearing	2,936,307	3,360,185
Total deposits	4,747,762	5,047,170
Employee benefit plans	91,983	125,968
Other liabilities, including accrued interest and payables to subsidiaries	65,583	56,153
Total other liabilities	157,566	182,121
Long-term debt	172,289	171,876
Total liabilities	5,077,617	5,401,167
Total shareholders' equity	864,815	977,493
Total liabilities and shareholders' equity	5,942,432	6,378,660

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

The Bank of N.T. Butterfield & Son Limited (parent company only)

Condensed Statements of Operations

(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Non-interest income			
Banking	26,116	24,465	24,429
Foreign exchange revenue	11,858	9,660	9,166
Custody and other administration services	6,869	7,693	6,927
Other non-interest income	1,269	3,372	5,924
Dividends from subsidiaries - Banks	72,268	82,327	121,522
Dividends from subsidiaries - Non-banks	21,318	22,656	19,864
Total non-interest income	139,698	150,173	187,832
Interest income			
Interest and fees on loans	118,829	116,031	123,774
Investments	49,790	44,663	52,135
Deposits with banks and other	14,499	2,056	3,109
Total interest income	183,118	162,750	179,018
Interest expense			
Deposits	10,834	6,405	9,386
Long-term debt	9,601	9,601	9,294
Securities sold under agreement to resell	22	—	—
Total interest expense	20,457	16,006	18,680
Net interest income before provision for credit losses	162,661	146,744	160,338
Provision for credit (losses) recoveries	(1,226)	2,206	(8,750)
Net interest income after provision for credit losses	161,435	148,950	151,588
Net gains (losses) on equity securities	14	85	658
Net realized gains (losses) on available-for-sale investments	—	—	702
Net gains (losses) on other real estate owned	9	(84)	(104)
Net other gains (losses)	—	850	714
Total other gains (losses)	23	851	1,970
Total net revenue	301,156	299,974	341,390
Non-interest expense			
Salaries and other employee benefits	65,789	62,405	69,521
Technology and communications	29,551	35,675	35,434
Professional and outside services	29,744	27,726	27,791
Property	10,232	9,586	9,092
Indirect taxes	15,714	15,906	15,633
Non-service employee benefits expense	4,845	4,493	3,462
Marketing	3,629	2,497	2,418
Amortization of intangible assets	169	169	169
Other expenses	9,613	9,502	9,896
Total non-interest expense	169,286	167,959	173,416
Net income before equity in undistributed earnings of subsidiaries	131,870	132,015	167,974
Equity in undistributed earnings of subsidiaries	82,150	30,653	(20,757)
Net income	214,020	162,668	147,217
Other comprehensive income, net of tax	(252,535)	(75,237)	37,417
Total comprehensive income	(38,515)	87,431	184,634

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

The Bank of N.T. Butterfield & Son Limited (parent company only)

Condensed Statements of Cash Flows

(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Cash flows from operating activities			
Net income	214,020	162,668	147,217
Adjustments to reconcile net income to operating cash flows			
Depreciation and amortization	14,922	28,617	26,562
Provision for credit losses (recoveries)	1,226	(2,206)	8,750
Share-based payments and settlements	17,077	15,151	15,245
Net change in equity securities at fair value	(14)	7,096	102
Net realized (gains) losses on available-for-sale investments	—	—	(702)
Net (gains) losses on other real estate owned	(9)	84	104
(Increase) decrease in carrying value of equity method investments	120	31	(1,376)
Dividends received from equity method investments	12	291	2,710
Equity in undistributed earnings of subsidiaries	(82,150)	(30,653)	20,757
Changes in operating assets and liabilities			
(Increase) decrease in accrued interest receivable and other assets	(25,888)	10,665	754
Increase (decrease) in employee benefit plans, accrued interest payable and other liabilities	15,386	(14,597)	9,456
Cash provided by (used in) operating activities	154,702	177,147	229,579
Cash flows from investing activities			
(Increase) decrease in securities purchased under agreements to resell	36,236	100,932	(54,756)
Short-term investments other than restricted cash: proceeds from maturities and sales	821,645	163,396	68,272
Short-term investments other than restricted cash: purchases	(666,837)	(391,996)	(35,319)
Available-for-sale investments: proceeds from sale	—	367	205,770
Available-for-sale investments: proceeds from maturities and pay downs	112,274	299,367	295,547
Available-for-sale investments: purchases	(44,504)	(669,391)	(317,451)
Held-to-maturity investments: proceeds from maturities and pay downs	158,665	269,311	229,576
Held-to-maturity investments: purchases	(203,867)	(316,820)	(195,898)
Net (increase) decrease in loans to third parties	125,215	60,395	8,263
Net (increase) decrease in loans to bank subsidiaries	13,534	135	(428)
Net (increase) decrease in loans to non-bank subsidiaries	3,845	(3,386)	(1,564)
Additions to premises, equipment and computer software	(20,567)	(10,372)	(11,313)
Proceeds from sale of other real estate owned	730	314	—
Injection of capital in subsidiary	(6,083)	(1,465)	(1,522)
Return of capital from a subsidiary	—	—	3,314
Cash provided by (used in) investing activities	330,286	(499,213)	192,491

The Bank of N.T. Butterfield & Son Limited
Notes to the Consolidated Financial Statements (continued)
(In thousands of US dollars, unless otherwise stated)

The Bank of N.T. Butterfield & Son Limited (parent company only)

Condensed Statements of Cash Flows

(In thousands of US dollars)

	Year ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Cash flows from financing activities			
Net increase (decrease) in demand and term deposit liabilities	(265,270)	(192,756)	630,141
Issuance of subordinated capital, net of underwriting fees	—	—	97,647
Repayment of long-term debt	—	—	(70,000)
Common shares repurchased	(3,897)	(19,754)	(86,640)
Proceeds from stock option exercises	—	—	1,739
Cash dividends paid on common shares	(87,343)	(87,285)	(88,932)
Cash provided by (used in) financing activities	(356,510)	(299,795)	483,955
Net increase (decrease) in cash, cash equivalent and restricted cash	128,478	(621,861)	906,025
Cash, cash equivalents and restricted cash: beginning of year	782,415	1,404,276	498,251
Cash, cash equivalents and restricted cash: end of year	910,893	782,415	1,404,276
Components of cash, cash equivalents and restricted cash at end of year			
Cash and cash equivalents	904,371	768,325	1,387,999
Restricted cash included in short-term investments on the consolidated balance sheets	6,522	14,090	16,277
Total cash, cash equivalents and restricted cash at end of year	910,893	782,415	1,404,276
Supplemental disclosure of cash flow information			
Cash interest paid	18,680	15,156	19,532
Supplemental disclosure of non-cash items			
Transfer to (out of) other real estate owned	830	307	314
Transfer of available-for-sale investments to held-to-maturity investments	364,983	—	—
Initial recognition of right-of-use assets and operating lease liabilities	—	536	—
Reduction in net loans due to initial adoption of a current expected credit loss model	—	—	3,899

Note 28: Subsequent events

On February 13, 2023, the Board of Directors declared an interim dividend of \$0.44 per common share to be paid on March 14, 2023 to shareholders of record on February 27, 2023.

On February 13, 2023, the Board approved a new common share repurchase program, authorizing the purchase of up to 3.0 million common shares through to February 29, 2024.

ITEM 18. FINANCIAL STATEMENTS

Not applicable.

ITEM 19. EXHIBITS

The SEC maintains an internet site at <https://www.sec.gov> that contains reports and other information regarding issuers that file electronically with the SEC. These SEC filings are also available to the public from commercial document retrieval services.

(a) The following documents are filed as exhibits hereto:

<u>Exhibit No.</u>	<u>Description</u>
1.1	Amended and Restated Bye-laws of The Bank of N.T. Butterfield & Son Limited (effective May 25, 2022)
1.2	The N.T. Butterfield & Son Bank Act, 1904 (incorporated by reference to Exhibit 3.2 to the registrant's registration statement on Form F-1, filed on August 4, 2016)
2.1	Form of Specimen of Common Registered Share Certificate (incorporated by reference to Exhibit 4.1 to the registrant's registration statement on Form F-1/A, filed on August 30, 2016)
2.2	Description of Securities
4.1	The Bank of N.T. Butterfield & Son Limited 2010 Omnibus Share Incentive Plan (incorporated by reference to Exhibit 10.2 to the registrant's registration statement on Form F-1, filed on August 4, 2016)
4.2	First Amendment to The Bank of N.T. Butterfield & Son Limited 2010 Omnibus Share Incentive Plan (incorporated by reference to Exhibit 99.1 to the registrant's registration statement on Form S-8, filed on October 27, 2016)
4.3	Subordinated Debt Securities Indenture between The Bank of N.T. Butterfield & Son Limited and The Bank of New York Mellon Trust Company, N.A., as Trustee, dated as at May 24, 2018 (incorporated by reference to Exhibit 4.1 to the registrant's report on Form 6-K filed on May 24, 2018)
4.4	First Supplemental Indenture, between The Bank of N.T. Butterfield & Son Limited and The Bank of New York Mellon Trust Company, N.A., as Trustee, dated as at May 24, 2018, to Subordinated Debt Securities Indenture, dated as at May 24, 2018 (incorporated by reference to Exhibit 4.2 to the registrant's report on Form 6-K filed on May 24, 2018)
4.5	Purchase Agreement, dated April 24, 2019, by and among Bank of N.T. Butterfield & Son Limited, Butterfield Bank (Guernsey) Limited and ABN AMRO (Channel Islands) Limited (incorporated by reference to Exhibit 2.1 to the registrant's report on Form 6-K filed on April 25, 2019)
4.6	The Bank of N.T. Butterfield & Son Limited 2020 Omnibus Share Incentive Plan (incorporated by reference to Exhibit 4.4 to the registrant's registration statement on Form S-8, filed on May 6, 2020)
4.7	Second Supplemental Indenture, between The Bank of N.T. Butterfield & Son Limited and The Bank of New York Mellon Trust Company, N.A., as Trustee, dated as at June 11, 2020, to Subordinated Debt Securities Indenture, dated as at May 24, 2018 (incorporated by reference to Exhibit 4.1 to the registrant's report on Form 6-K filed on June 11, 2020)
4.8	The Bank of N.T. Butterfield & Son Limited 2021 Employee Share Purchase Plan (incorporated by reference to Exhibit 4.4 to the registrant's registration statement on Form S-8, filed on November 2, 2021)
8	List of Subsidiaries
12.1	Certification of the Chairman & Chief Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934
12.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934
13.1	Certification of the Chairman & Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1	Consent of PricewaterhouseCoopers Ltd.
101	The following materials from our annual report on Form 20-F for the year ended December 31, 2022 formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Financial Statements and (ii) the Notes to the Consolidated Financial Statements, tagged as blocks of text and in detail.
104	Cover page interactive data file (formatted as Inline XBRL and included in Exhibit 101)

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

The Bank of N.T. Butterfield & Son Limited

By: /s/ Michael Collins
Name: Michael Collins
Title: Chairman & Chief Executive Officer
Date: February 22, 2023

Glossary of abbreviations and defined terms

AFS	Available-for-sale	HTM	Held-to-maturity
AMLA	Swiss Federal Act on Combating Money Laundering and Terrorist Financing of 10 October 1997	IGAs	Intergovernmental Agreements
AOCIL	Accumulated other comprehensive income (loss)	IRC	Internal Revenue Code of 1986
AT1	Additional Tier 1 capital	IRR	Interest Rate Risk
AUA	Assets Under Administration	IRS	US Internal Revenue Service
AUC	Assets Under Custody	IRRBB	Interest Rate Risk in the Banking Book
AUM	Assets Under Management	ISDA	International Swaps and Derivatives Association
Basel III	Basel III Accord	Jersey DCS	Jersey Bank Deposit Compensation Scheme
BATCA	Banks and Trust Companies Act (2020 Revision)	JFSC	Jersey Financial Services Commission
BBH	Brown Brothers Harriman	JOIC	Jersey Office of the Information Commissioner
BBL	Banking Business (Jersey) Law 1991	KBRA	Kroll Bond Rating Agency
BCBS	Basel Committee on Banking Supervision	LCR	Liquidity Coverage Ratio
BDCA	Banks and Deposit Companies Act 1999	LIBOR	London Interbank Offered Rate
BMA	Bermuda Monetary Authority	LGD	Loss-Given Default
BNYM	Bank of New York Mellon	LTV	Loan-to-Value
Board	Board of Directors	MAS	Monetary Authority of Singapore
BRR	Borrower Risk Ratings	MIPRU	Mortgage and Home Finance Firms and Insurance Intermediaries
BSL	Banking Supervision (Bailiwick of Guernsey) Law, 1994	Moody's	Moody's Investor Service
BSX Act	Bermuda Stock Exchange Company Act 1992	NACL	Non-Accrual Loan
BSX	Bermuda Stock Exchange	NCO	Net Charge-Off
CARP	Capital Assessment and Risk Profile	NII	Net Interest Income
CCR	Counterparty Credit Risk	NIM	Net interest margin
CD	Certificates of Deposit	NPA	Non-Performing Assets
CEACS	Core net income attributable to common shareholders	NPL	Non-Performing Loan
CECL	Current Expected Credit Loss Model	NRSROs	Nationally recognized statistical rating organizations
CEO	Chairman & Chief Executive Officer	NSFR	Net Stable Funding Ratio
CET1	Common Equity Tier 1 capital	NYSE	New York Stock Exchange
CFO	Chief Financial Officer	OCL	Other comprehensive loss
CIMA	Cayman Islands Monetary Authority	OFAC	US Treasury Department's Office of Foreign Assets Control
Core ROATA	Core return on average tangible assets	OREO	Other Real Estate Owned
Core ROATCE	Core return on average tangible common equity	OTC	Over-the-counter
CP	Commercial Paper	PCD	Purchased Credit-Deteriorated
CRM	Credit Risk Management	PCI	Purchased Credit-Impaired
CSPB	Corporate Service Provider Business Act 2012	PCL	Proceeds of Crime Act (2020 Revision)
CTA	Cumulative translation adjustment	PD	Probability of Default
DIS	Deposit Insurance Scheme	PFIC	Passive Foreign Investment company
DPA	Data Protection Act	PIPA	Personal Information Protection Act 2016
DPAJL	Data Protection Authority (Jersey) Law 2018	Regulation FD	Regulation Fair Disclosure
DPJL	Data Protection (Jersey) Law 2018	ROA	Return on average assets
DPL 2017	Data Protection (Bailiwick of Guernsey) Law, 2017	ROE	Return on average common shareholders' equity
D-SIB	Domestic Systemically Important Bank	RPCC	Risk Policy and Compliance Committee
DXC	DXC Technologies	RWA	Risk-weighted Assets
EAD	Exposure at Default	S&P	Standard & Poor's
ECAIs	External Credit Assessment Institutions	SA-CCR	Standardised Approach for measuring Counterparty Credit Risk exposures
ECOFIN	EU's Economic and Financial Affairs Council	SEC	Securities and Exchange Commission
ESG	Environmental, Social and Governance	SIBA	Securities Investment Business Act (2020 Revision)
EU	European Union	SREP	Supervisory Review and Evaluation Process
EVE	Economic Value of Equity	SWIFT	Society for Worldwide Interbank Financial Telecommunication
Exchange Act	Securities Exchange Act of 1934	TCA	Trust Companies Act
FATCA	Foreign Account Tax Compliance Act	TCE/TA	Tangible Common Equity/Tangible Assets
FATF	Financial Action Task Force	TDR	Troubled debt restructuring
FCA	Financial Conduct Authority	TE/TA	Tangible total Equity/Tangible Assets
FCRA	Fair Credit Reporting Act	USAO	U.S Attorney's Office for the Southern District of New York
FIC	Financial Institutions Committee		
FinIA	Swiss Federal Financial Institutions Act		
FinIO	Swiss Federal Financial Institutions Act		
FINMA	Swiss Financial Market Supervisory Authority		
FPI	Foreign Private Issuer		
FSMA	Financial Services and Markets Act 2000		
GAAP	Generally Accepted Accounting Principles in the United States of America		
GALCO	Group Asset and Liability Committee		
GCC	Group Credit Committee		
GDPR	EU General Data Protection Regulation (EU) 2016/679		
GDP	Gross Domestic Product		
GFSC	Guernsey Financial Services Commission		
GRCC	Group Risk and Compliance Committee		
Guernsey DCS	Guernsey Deposit Compensation Scheme		

Exhibit 1.1

AMENDED & RESTATED BYE-LAWS
OF
THE BANK OF N.T. BUTTERFIELD & SON LIMITED

Effective: 25 May 2022

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INTERPRETATION

1. Definitions

1.1 In these Amended & Restated Bye-laws (these “Bye-laws”), the following words and expressions shall, where not inconsistent with the context, have the following meanings, respectively:

Auditor	the independent auditor of the Bank;
Bank	The Bank of N.T. Butterfield & Son Limited for which these Bye-laws are approved and confirmed;
Banks Act	the Banks and Deposit Companies Act 1999 as amended from time to time or any other legislation regulating banks in Bermuda generally which may be passed by the Parliament of Bermuda in substitution therefor or in addition thereto;
Bermuda Stock Exchange	the stock exchange operated and existing pursuant to the provisions of The Bermuda Stock Exchange Company Act 1992 and any successor body thereto upon which securities of the Bank are traded within Bermuda;
Board	the Board of Directors appointed or elected pursuant to these Bye-laws and acting by resolution in accordance with the Companies Act and these Bye-laws, or the Directors present at a meeting of Directors at which there is a quorum;
BSD	the Bermuda Securities Depository Service operated by the Bermuda Stock Exchange;
BSD Account Holder	any person that appears on the list of BSD Account Holders (in respect of shares in the Bank) provided to the Bank by the BSD from time to time. For the avoidance of any doubt, in determining whether or not any person is a BSD Account Holder the Bank shall be entitled to rely solely on such list without any obligation to make any further investigation or enquiry;

BSD Nominee	BSD Nominee Limited, or such other nominee appointed by the BSD for the purpose of acting as nominee company shareholder for the BSD;
BSD Regulations	the Bermuda Securities Depository Regulations made under Section 11 of the Bermuda Stock Exchange Company Act 1992;
Butterfield Act	The N.T. Butterfield & Son Act, 1904 as amended from time to time, or any other legislation setting forth the constitution of the Bank which may be passed by Parliament in substitution therefor which shall be deemed to constitute the Memorandum of Association of the Bank for the purposes of these Bye-laws;
Companies Act	the Companies Act 1981 as amended from time to time;
Director	a member of the Board;
Exchange	the stock exchange(s) upon which securities of the Bank are traded;
Member	a holder of Shares in the Bank;
Notice	written notice as further provided in these Bye-laws unless otherwise specifically stated;
Officer	any person appointed by the Board to hold an office in the Bank;
Ordinary Share	an ordinary voting share par value BDS\$0.01 per share in the capital of the Bank;
Register of Directors and Officers	the register of Directors and Officers referred to in these Bye-laws;
Register of Members	the register of members referred to in these Bye-laws;
Secretary	the person appointed to perform any or all of the duties of secretary of the Bank and in-

	cludes any deputy or assistant secretary and any person appointed by the Board to perform any of the duties of the Secretary;
Share	any share in the capital of the Bank; and
Treasury Share	a share of the Bank that was or is treated as having been acquired and held by the Bank and has been held continuously by the Bank since it was so acquired and has not been cancelled.

- 1.2 In these Bye-laws, where not inconsistent with the context:
- (a) words denoting the plural number include the singular number and vice versa;
 - (b) words denoting the masculine gender include the feminine and neuter genders;
 - (c) words importing persons include companies, associations or bodies of persons whether corporate or not;
 - (d) the words:
 - (i) “may” shall be construed as permissive; and
 - (ii) “shall” shall be construed as imperative;
 - (e) a reference to a statutory provision shall be deemed to include any amendment or re-enactment thereof;
 - (f) the phrase “issued and outstanding” in relation to Shares, means Shares in issue other than Treasury Shares;
 - (g) the word “corporation” means a corporation whether or not a company within the meaning of the Companies Act; and
 - (h) unless otherwise provided herein, words or expressions defined in the Companies Act shall bear the same meaning in these Bye-laws.
- 1.3 In these Bye-laws expressions referring to writing or its cognates shall, unless the contrary intention appears, include facsimile, printing, lithography, photography, electronic mail and other modes of representing words in visible form.
- 1.4 Headings used in these Bye-laws are for convenience only and are not to be used or relied upon in the construction hereof.

SHARES

2. Power to Issue Shares

- 2.1 Subject to these Bye-laws and to any resolution of the Members to the contrary, and without prejudice to any special rights previously conferred on the holders of any existing Shares or class or series of Shares, the Board shall have the power to issue any unissued Shares on such terms and conditions as it may determine whether or not the existing voting control of any Member is thereby affected.
- 2.2 Without limitation to the provisions of Bye-law 4, subject to the Companies Act, any preference Shares may be issued or converted into Shares that (at a determinable date or at the option of the Bank or the holder) are liable to be redeemed on such terms and in such manner as may be determined by the Board (before the issue or conversion).
- 2.3 Without prejudice to the foregoing, neither the Bank nor the Board shall be obliged, when making or granting any allotment of, offer of, option over or disposal of Shares to make, or make available, any such offer, option or Shares to Members or others with registered addresses in any particular territory or territories where, in the absence of a registration statement or other special formalities, this would or might, in the opinion of the Board, be unlawful or impracticable. Members affected as a result of the foregoing sentence shall not be, or be deemed to be, a separate class of shareholders for any purpose whatsoever.

3. Power of the Bank to Purchase Its Shares

- 3.1 The Bank may purchase its own Shares for cancellation or acquire them as Treasury Shares in accordance with the Companies Act on such terms as the Board shall think fit.
- 3.2 The Board may exercise all the powers of the Bank to purchase or acquire all or any part of its own Shares in accordance with the Companies Act.

4. Rights Attaching to Shares

- 4.1 At the date of adoption of these Bye-laws the share capital of the Bank is divided into the following classes: (a) 2,000,000,000 Ordinary Shares, (b) 6,000,000,000 non-voting ordinary shares par value BDS\$0.01 per share (the "Non-Voting Ordinary Shares"), (c) 110,200,001 preference shares of par value US\$0.01 per share (the "US\$ Preference Shares") and (d) 50,000,000 preference shares of par value £0.01 per share (the "£ Preference Shares" and together with the US\$ Preference Shares, the "Preference Shares").
- 4.2 The holders of Ordinary Shares shall, subject to these Bye-laws (including, without limitation, the rights attaching to the Preference Shares):

- (a) be entitled to one vote per Ordinary Share;
- (b) be entitled to such dividends as the Board may from time to time declare;
- (c) in the event of a winding-up or dissolution of the Bank, whether voluntary or involuntary or for the purpose of a reorganisation or otherwise or upon any distribution of capital, be entitled to the surplus assets of the Bank; and
- (d) generally be entitled to enjoy all of the rights attaching to Ordinary Shares.

4.3 The Board is authorised to provide for the issuance of the Preference Shares in one or more series, and to establish from time to time the number of Preference Shares to be included in each such series, and to fix the terms, including designation, powers, preferences, rights, qualifications, limitations and restrictions of the Preference Shares of each such series (and, for the avoidance of doubt, such matters and the issuance of such Preference Shares shall not be deemed to vary the rights attaching to the Ordinary Shares or, subject to the terms of any other series of Preference Shares, to vary the rights attached to any other series of Preference Shares). The authority of the Board with respect to each series shall include, but not be limited to, determination of the following:

- (a) the number of Preference Shares constituting that series and the distinctive designation of that series;
- (b) the dividend rate on the Preference Shares of that series, whether dividends shall be cumulative and, if so, from which date or dates, and the relative rights of priority, if any, of the payment of dividends on Preference Shares of that series;
- (c) whether that series shall have voting rights, in addition to the voting rights provided by law, and if so, the terms of such voting rights;
- (d) whether that series shall have conversion or exchange privileges (including, without limitation, conversion into Ordinary Shares), and, if so, the terms and conditions of such conversion or exchange, including provision for adjustment of the conversion or exchange rate in such events as the Board shall determine;
- (e) whether or not the Preference Shares of that series shall be redeemable or repurchaseable, and, if so, the terms and conditions of such redemption or repurchase, including the manner of selecting Preference Shares for redemption or repurchase if less than all Preference Shares are to be redeemed or repurchased, the date or dates upon or after which they shall be redeemable or repurchaseable, and the amount per Preference Share paya-

ble in case of redemption or repurchase, which amount may vary under different conditions and at different redemption or repurchase dates;

- (f) whether that series shall have a sinking fund for the redemption or repurchase of Preference Shares of that series, and, if so, the terms and amount of such sinking fund;
- (g) the right of the Preference Shares of that series to the benefit of conditions and restrictions upon the creation of indebtedness of the Bank or any subsidiary, upon the issue of any additional Shares (including additional Preference Shares of such series or any other series) and upon the payment of dividends or the making of other distributions on, and the purchase, redemption or other acquisition by the Bank or any subsidiary of any issued Shares;
- (h) the rights of the Preference Shares of that series in the event of voluntary or involuntary liquidation, dissolution or winding up of the Bank, and the relative rights of priority, if any, of payment in respect of Preference Shares of that series;
- (i) the rights of holders of that series to elect or appoint Directors; and
- (j) any other relative participating, optional or other special rights, qualifications, limitations or restrictions of that series.

4.4 Any Preference Shares of any series which have been redeemed (whether through the operation of a sinking fund or otherwise) or which, if convertible or exchangeable, have been converted into or exchanged for Shares of any other class or classes shall have the status of authorised and unissued Preference Shares of the same series and may be reissued as a part of the series of which they were originally a part or may be reclassified and reissued as part of a new series of Preference Shares to be created by resolution or resolutions of the Board or as part of any other series of Preference Shares, all subject to the conditions and the restrictions on issuance set forth in the resolution or resolutions adopted by the Board providing for the issue of any series of Preference Shares.

4.5 At the discretion of the Board, whether or not in connection with the issuance and sale of any Preference Shares or other securities of the Bank, the Bank may issue securities, contracts, warrants or other instruments evidencing any Preference Shares, option rights, securities having conversion or option rights, or obligations on such terms, conditions and other provisions as are fixed by the Board, including, without limiting the generality of this authority, conditions that preclude or limit any person or persons owning or offering to acquire a specified number or percentage of the issued Ordinary Shares, other Shares, option rights, securities having conversion or option rights, or obligations of the Bank or transferee of the

person or persons from exercising, converting, transferring or receiving the Shares, option rights, securities having conversion or option rights, or obligations.

- 4.6 All the rights attaching to a Treasury Share shall be suspended and shall not be exercised by the Bank while it holds such Treasury Share and, except where required by the Companies Act, all Treasury Shares shall be excluded from the calculation of any percentage or fraction of the share capital, or Shares, of the Bank.

5. Shares to Be Issued Fully Paid

Notwithstanding anything to the contrary in these Bye-laws, no Share shall be issued unless such Share is fully paid up.

6. [INTENTIONALLY OMITTED]

7. [INTENTIONALLY OMITTED]

8. Share Certificates

- 8.1 The Shares of each Member may be uncertificated or evidenced by share certificates in such form as the Board may from time to time prescribe.

- 8.2 The Bank shall be under no obligation to complete and deliver a share certificate unless specifically called upon to do so by the Member to whom the Shares have been allotted. In such case, the Member shall be entitled without charge to receive one certificate for all of his Shares or several certificates each for one or more of his Shares upon payment of \$10.00 for every certificate after the first one or such lesser sum as the Directors shall from time to time determine. The Board may by resolution determine, either generally or in a particular case, that any or all signatures on share certificates may be printed thereon or affixed by mechanical means.

- 8.3 If any share certificate shall be proved to the satisfaction of the Board to have been worn out, lost, mislaid, or destroyed the Board shall, upon request by the Member, cause a new certificate to be issued without charge and may request an indemnity for the lost certificate if it sees fit.

- 8.4 Notwithstanding any provisions of these Bye-laws:

- (a) the Directors shall, subject to the Companies Act and any other applicable laws and regulations and the facilities and requirements of any relevant system concerned, have power to implement any arrangements they may, in their absolute discretion, think fit in relation to the evidencing of title to and transfer of uncertificated Shares and to the extent such arrangements are so implemented, no provision of these Bye-laws shall apply or have ef-

fect to the extent that it is in any respect inconsistent with the holding or transfer of Shares in uncertificated form; and

- (b) unless otherwise determined by the Directors and as permitted by the Companies Act and any other applicable laws and regulations, no person shall be entitled to receive a certificate in respect of any Share for so long as the title to that Share is evidenced otherwise than by a certificate and for so long as transfers of that Share may be made otherwise than by a written instrument.

8.5 Where a Member has sold part of his holding, that Member is entitled to a certificate for the balance of his holding without charge.

8.6 Notwithstanding anything to the contrary in these Bye-laws, Shares that are listed or admitted to trading on an Exchange shall be transferred in accordance with the rules and regulations of such Exchange and the applicable transfer agent of the Bank.

9. Fractional Shares

The Bank may issue its Shares in fractional denominations and deal with such fractions to the same extent as its whole Shares, and Shares in fractional denominations shall have in proportion to the respective fractions represented thereby all of the rights of whole Shares including (but without limiting the generality of the foregoing) the right to vote, to receive dividends and distributions and to participate in a winding-up.

10. Ownership

10.1 The Bank may at any time enquire in writing of any Member:

- (a) whether or not he is the beneficial owner of the Shares;
- (b) whether or not he is under any obligation to exercise any rights attaching to that Share at the instance of, or for the benefit of, another person, and, if so, the name of such other person; and
- (c) whether he owns that Share jointly or severally with another person and, if so, the name of such other person who has such an interest;

and the Bank may further require a person who responds to such enquiry to furnish such proof of the correctness of his response as the Bank considers necessary.

10.2 Any person to whom an enquiry is made pursuant to Bye-law 10.1 shall reply in writing within fourteen (14) days after receipt of the enquiry and shall provide the information required.

REGISTRATION OF SHARES

11. Register of Members

11.1 The Board shall cause to be kept in one or more books a Register of Members and shall enter therein the particulars required by the Companies Act.

11.2 The Register of Members shall be open to inspection without charge at the registered office of the Bank or at such other place in Bermuda convenient for inspection on every business day, subject to such reasonable restrictions as the Board may impose, so that not less than two hours in each business day be allowed for inspection. The Register of Members may, after notice has been given in accordance with the Companies Act, be closed for any time or times not exceeding in the whole thirty (30) days in each year.

12. Registered Holder Absolute Owner

The Bank shall be entitled to treat the registered holder of any Share as the absolute owner thereof and accordingly shall not be bound to recognise any equitable claim or other claim to, or interest in, such Share on the part of any other person.

13. Transfer of Registered Shares

13.1 An instrument of transfer shall be in writing in the form of the following, or as near thereto as circumstances admit, or in such other form as the Board may accept:

Transfer of a Share or Shares

[] (the "Bank")

FOR VALUE RECEIVED [amount], I, [name of transferor] hereby sell, assign and transfer unto [transferee] of [address], [number] shares of the Bank.

Status of Transferor: Bermudian* [] Other _____

Status of Transferee**: Bermudian* [] Other _____

If joint holders, state the type of co-ownership to be acquired by the Transferees:
Joint tenancy/Tenancy in common.

DATED this [] day of [], 20[]

Signed by:

In the presence of:

Transferor

Witness

 Transferee

 Witness

* Bermudian has the meaning prescribed in the Companies Act 1981 and includes, inter alia, (a) any person who has Bermudian status by virtue of the law relating to immigration; (b) a local company in which the percentage of Shares beneficially owned by Bermudians is not less than 80% of the total issued share capital; or (c) a wholly owned subsidiary of a local company.

** Where the shares are to be acquired by the Transferee as nominee, the status of the beneficial owner must be given.

- 13.2 Such instrument of transfer shall be signed by (or, in the case of a party that is a corporation, on behalf of) the transferor and transferee, provided that, in the case of a fully paid up Share, the Board may accept the instrument signed by or on behalf of the transferor alone. The transferor shall be deemed to remain the holder of such Share until the same has been registered as having been transferred to the transferee in the Register of Members.
- 13.3 The Board may refuse to recognise any instrument of transfer unless it is accompanied by the certificate, if any, in respect of the Shares to which it relates and by such other evidence as the Board may reasonably require to show the right of the transferor to make the transfer.
- 13.4 No fee shall be payable to the Company for registration of any transfer of Shares.
- 13.5 The joint holders of any Share may transfer such Share to one or more of such joint holders, and the surviving holder or holders of any Share previously held by them jointly with a deceased Member may transfer any such Share to the executors or administrators of such deceased Member.
- 13.6 The Board shall refuse to register a transfer unless all applicable consents, authorisations and permissions of any governmental body or agency in Bermuda have been obtained or if a transfer would otherwise violate any statutory restriction on transfers. If the Board refuses to register a transfer of any Share, the Secretary shall, within three (3) months after the date on which the transfer was lodged with the Bank, send to the transferor and transferee notice of the refusal.
- 13.7 Shares may be transferred without a written instrument if transferred by an appointed agent or otherwise in accordance with the Companies Act.
- 13.8 Notwithstanding anything to the contrary in these Bye-laws, Shares that are listed or admitted to trading on an Exchange shall be transferred in accordance with the rules and regulations of such Exchange and the applicable transfer agent of the Bank.

14. Transmission of Registered Shares

- 14.1 In the case of the death of a Member, the survivor or survivors where the deceased Member was a joint holder, and the legal personal representatives of the deceased Member where the deceased Member was a sole holder, shall be the only persons recognised by the Bank as having any title to the deceased Member’s interest in the Shares. Nothing herein contained shall release the estate of a deceased joint holder from any liability in respect of any Share which had been jointly held by such deceased Member with other persons. Subject to the Companies Act, for the purpose of this Bye-law, legal personal representative means the executor or administrator of a deceased Member or such other person as the Board may, in its absolute discretion, decide as being properly authorised to deal with the Shares of a deceased Member.

- 14.2 Any person becoming entitled to a Share in consequence of the death or bankruptcy of any Member may be registered as a Member upon such evidence as the Board may deem sufficient or may elect to nominate some person to be registered as a transferee of such Share, and in such case the person becoming entitled shall execute in favour of such nominee an instrument of transfer in writing in the form, or as near thereto as circumstances admit, of the following:

Transfer by a Person Becoming Entitled on Death/Bankruptcy of a Member

[] (the “Bank”)

I/We, having become entitled in consequence of the [death/bankruptcy] of [name and address of deceased/bankrupt Member] to [number] share(s) standing in the Register of Members of the Bank in the name of the said [name of deceased/bankrupt Member] instead of being registered myself/ourselves, elect to have [name of transferee] (the “Transferee”) registered as a transferee of such share(s) and I/we do hereby accordingly transfer the said share(s) to the Transferee to hold the same unto the Transferee, his or her executors, administrators and assigns, subject to the conditions on which the same were held at the time of the execution hereof; and the Transferee does hereby agree to take the said share(s) subject to the same conditions.

DATED this [] day of [], 20[] Signed by: In the presence of:

Transferor

Witness

Transferee

Witness

- 14.3 On the presentation of the foregoing materials to the Board, accompanied by such evidence as the Board may require to prove the title of the transferor, the transferee shall be registered as a Member. Notwithstanding the foregoing, the Board shall, in any case, have the same right to decline or suspend registration as it would have had in the case of a transfer of the Share by that Member before such Member's death or bankruptcy, as the case may be.
- 14.4 Where two or more persons are registered as joint holders of a Share or Shares, then in the event of the death of any joint holder or holders, the remaining joint holder or holders shall be absolutely entitled to such Share or Shares and the Bank shall recognise no claim in respect of the estate of any joint holder except in the case of the last survivor of such joint holders.
- 14.5 Notwithstanding anything to the contrary in these Bye-laws, Shares that are listed or admitted to trading on an Exchange shall be transferred in accordance with the rules and regulations of such Exchange and the applicable transfer agent of the Bank.

ALTERATION OF SHARE CAPITAL

15. Power to Alter Capital

- 15.1 If authorised by resolution of the Members, the Bank may increase, divide, consolidate, subdivide, change the currency denomination of, diminish or otherwise alter or reduce its share capital in any manner permitted by the Companies Act.
- 15.2 Where, on any alteration or reduction of share capital or otherwise, fractions of Shares or some other difficulty would result, the Board may deal with or resolve the same in such manner as it thinks fit.

16. Variation of Rights Attaching to Shares

If, at any time, the share capital is divided into different classes of Shares, the rights attached to any class (unless otherwise provided by the terms of issue of the Shares of that class) may, whether or not the Bank is being wound-up, be varied with the consent in writing of the holders of three-fourths of the issued Shares of that class or with the sanction of a resolution passed by a majority of the votes cast at a separate general meeting of the holders of the Shares of the class at which meeting the necessary quorum shall be two (2) persons holding or representing by proxy one-third of the issued Shares of the class. The rights conferred upon the holders of the Shares of any class issued with preferred or other rights shall not, unless otherwise expressly provided by the terms of issue of the Shares of that class, be deemed to be varied by the creation or issue of further Shares ranking *pari passu* therewith.

DIVIDENDS AND CAPITALISATION

17. Dividends

- 17.1 The Board may, subject to these Bye-laws and in accordance with the Companies Act, declare a dividend to be paid to the Members, in proportion to the number of Shares held by them, and such dividend may be paid in cash or wholly or partly in specie, in which case the Board may fix the value for distribution in specie of any assets. No unpaid dividend shall bear interest as against the Bank.
- 17.2 The Board may fix any date as the record date for determining the Members entitled to receive any dividend.
- 17.3 The Bank may pay dividends in proportion to the amount paid up on each Share where a larger amount is paid up on some Shares than on others.
- 17.4 The Board may declare and make such other distributions (in cash or in specie) to the Members as may be lawfully made out of the assets of the Bank. No unpaid distribution shall bear interest as against the Bank.

18. Power to Set Aside Profits

The Board may, before declaring a dividend, set aside out of the surplus or profits of the Bank, such amount as it thinks proper as a reserve to be used to meet contingencies or for equalising dividends or for any other purpose.

19. Method of Payment

- 19.1 Any dividend or other monies payable in respect of a Share may be paid by cheque or draft sent through the post directed to the address of the Member in the Register of Members (in the case of joint Members, the senior joint holder, seniority being determined by the order in which the names stand in the Register of Members), or by direct transfer to such bank account as such Member may direct. Every such cheque shall be made payable to the order of the person to whom it is sent or to such persons as the Member may direct, and payment of the cheque or draft shall be a good discharge to the Bank. Every such cheque or draft shall be sent at the risk of the person entitled to the money represented thereby. If two or more persons are registered as joint holders of any Shares any one of them can give an effectual receipt for any dividend paid in respect of such Shares.
- 19.2 Any dividend and or other monies payable in respect of a Share which has remained unclaimed for a period of seven (7) years from the date when it became due for payment shall, if the Board so resolves, be forfeited and cease to remain owing by the Bank provided that during that seven (7) year period at least three dividends in respect of the Shares in question have become payable and no dividend during that period has been claimed and on or after the expiry of the seven

(7) year period the Bank has given notice by advertisement locally and also in a newspaper circulating in the area of the last known address of the Member or the address at which service of notices may be effected in the manner authorised by these Bye-laws is located, of its intention to declare the monies forfeit, and provided that the applicable Exchange has been informed of such intention. The payment of any unclaimed dividend or other monies payable in respect of a Share may (but need not) be paid by the Bank into an account separate from the Bank's own account. Such payment shall not constitute the Bank as trustee in respect thereof.

19.3 The Bank shall be entitled to cease sending dividend cheques and drafts by post or otherwise to a Member if those instruments have been returned undelivered to, or left uncashed by, that Member on at least two (2) consecutive occasions, or, following one (1) such occasion, reasonable enquiries have failed to establish the Member's new address. The entitlement conferred on the Bank by this Bye-law 19.3 in respect of any Member shall cease if the Member claims a dividend or cashes a dividend cheque or draft.

19.4 The Bank shall be entitled to sell the Shares of a Member who is untraceable if:

- (a) During any period of seven (7) years at least three (3) dividends in respect of the Shares in question have become payable and no dividend during that period has been claimed; and
- (b) On or after expiration of the seven (7) years the Bank has given notice, by advertisement published in a daily newspaper in Bermuda and also in a newspaper circulating in the area in which the last known address of the Member or the address at which service of notices may be effected in the manner authorised by these Bye-laws is located, of its intention to sell the Shares and has informed the applicable Exchange of such intention.

If the Bank in accordance with this Bye-law elects to sell the unclaimed Shares on the open market, then the Bank shall be entitled to keep the proceeds of any such sale.

20. Capitalisation

20.1 The Board may capitalise any amount for the time being standing to the credit of any of the Bank's share premium or other reserve accounts or to the credit of the profit and loss account or otherwise available for distribution by applying such amount in paying up unissued Shares to be allotted as fully paid up bonus Shares pro-rata (except in connection with the conversion of Shares of one class to Shares of another class) to the Members.

20.2 The Board may capitalise any amount for the time being standing to the credit of a reserve account or amounts otherwise available for dividend or distribution by

applying such amounts in paying up in full, partly or nil paid up Shares of those Members who would have been entitled to such amounts if they were distributed by way of dividend or distribution.

MEETINGS OF MEMBERS

21. Annual General Meetings

The annual general meeting of the Bank shall be held in each year at such time and place as the Chairman or the Board shall appoint. Only persons who are proposed or nominated by the Board, or by one or more Members in accordance with Bye-law 39, shall be eligible for election as Directors at an annual general meeting and only such other business shall be conducted or considered, as shall have been properly brought before the meeting by the Board or Members.

22. Special General Meetings

The Chairman or the Board may convene a special general meeting whenever in their judgment such a meeting is necessary. Only persons who are proposed or nominated by the Board, or by one or more Members in accordance with Bye-law 39, shall be eligible for election as Directors at a special general meeting and only such other business shall be conducted or considered, as shall have been properly brought before the meeting by the Board.

23. Requisitioned General Meetings and Other Business

23.1 The Board shall, on the requisition of Members holding at the date of the deposit of the requisition not less than one-tenth of such of the paid-up share capital of the Bank as at the date of the deposit carries the right to vote at general meetings, forthwith proceed to convene a special general meeting pursuant to the Companies Act.

23.2 In addition to any other rights of Members under the Companies Act or these Bye-laws, business may be brought before any annual general meeting by any person who: (a) is a Member of record on the date of the giving of the notice provided for in this Bye-law 23 and on the record date for the determination of Members entitled to receive notice of and vote at such meeting; and (b) complies with the notice procedures set forth in this Bye-law 23, unless such notice procedures are waived by the Board.

23.3 In addition to any other applicable requirements, for business to be proposed by a Member pursuant to Bye-law 23.2, such Member must have given timely notice thereof in proper written form to the Secretary.

23.4 To be timely, a notice given to the Secretary must be delivered to or mailed and received by the Secretary at the Bank's registered office not less than ninety (90)

days nor more than one-hundred twenty (120) days before the anniversary of the last annual general meeting. In the event the annual general meeting is called for a date that is greater than thirty (30) days before or after such anniversary, the notice must be so delivered or mailed and received not later than ten (10) days following the earlier of the date on which notice of the annual general meeting was posted to Members or the date on which public disclosure of the date of the annual general meeting was made.

- 23.5 To be in proper written form, a notice given to the Secretary pursuant to this Bye-law 23 must set forth as to each matter such Member proposes to bring before the annual general meeting: (a) a brief description of the business desired to be brought before the annual general meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and, in the event that such business includes a proposal to amend these Bye-laws, the language of the proposed amendment) and the reasons for conducting such business at the annual general meeting; (b) the name and record address of such Member and of the beneficial owner, if any, on whose behalf the business is being proposed; (c) the class or series and number of Shares of the Bank which are registered in the name of or beneficially owned by such Member and such beneficial owner (including any Shares as to which such Member or such beneficial owner has a right to acquire ownership at any time in the future); (d) a description of all derivatives, swaps or other transactions or series of transactions engaged in, directly or indirectly, by such Member or such beneficial owner, the purpose or effect of which is to give such Member or such beneficial owner economic risk similar to ownership of Shares; (e) a description of all agreements, arrangements, understandings or relationships engaged in, directly or indirectly, by such Member or such beneficial owner, the purpose or effect of which is to mitigate loss to, reduce the economic risk (or ownership or otherwise) of any Shares or any class or series of Shares of the Bank, manage the risk of Share price changes for, or increase or decrease the voting power of, such Member or beneficial owner, or which provides, directly or indirectly, such Member or beneficial owner with the opportunity to profit from any decrease in the price or value of the Shares or any class or series of Shares of the Bank; (f) a description of all agreements, arrangements, understandings or relationships between such Member or such beneficial owner and any other person or persons (including their names) in connection with the proposal of such business by such Member and any material interest of such Member or such beneficial owner in such business; and (g) a representation that such Member intends to appear in person or by proxy at the annual general meeting to bring such business before the annual general meeting.
- 23.6 Once business has been properly brought before an annual general meeting in accordance with the procedures set forth in this Bye-law 23, nothing in this Bye-law shall be deemed to preclude discussion by any Member of such business. If the chairman of the annual general meeting determines that business was not properly brought before the annual general meeting in accordance with this Bye-law 23,

the chairman shall declare to the meeting that the business was not properly brought before the meeting and the determination of the chairman shall be final and such business shall not be transacted.

- 23.7 No business may be transacted at an annual general meeting or requisitioned general meeting, other than business that is either (a) properly brought before the annual general meeting by or at the direction of the Board (or any duly authorised committee thereof); or (b) properly brought before the meeting by any Member or Members in accordance with the Companies Act and these Bye-laws.

24. Notice

- 24.1 At least twenty-one (21) days' notice of an annual general meeting shall be given to each Member entitled to attend and vote thereat stating the date, place and time at which the meeting is to be held, that the appointment or election of Directors will take place thereat, and, as far as practicable, the other business to be conducted at the meeting.
- 24.2 At least twenty-one (21) days' notice of a special general meeting shall be given to each Member entitled to attend and vote thereat stating the date, place and time at which the meeting is to be held, and, as far as practicable, the business to be conducted at the meeting.
- 24.3 The Board may fix any date as the record date for determining the Members entitled to receive notice of and to vote at any general meeting of the Bank.
- 24.4 A general meeting shall, notwithstanding that it is called on shorter notice than that specified in these Bye-laws, be deemed to have been properly called if it is so agreed by (a) all the Members entitled to attend and vote thereat in the case of an annual general meeting; and (b) a majority in number of the Members having the right to attend and vote at the meeting, being a majority together holding not less than 95% in nominal value of the Shares giving a right to attend and vote thereat in the case of a special general meeting.
- 24.5 The accidental omission to give notice of a general meeting to, or the non-receipt of a notice of a general meeting by, any person entitled to receive notice shall not invalidate the proceedings at that meeting.

25. Giving Notice and Other Documents

- 25.1 Any notice or other document (including but not limited to a share certificate, any notice of a general meeting of the Bank, any instrument of proxy and any document to be sent in accordance with the Bye-Laws) may be sent to, served on or delivered to any Member by the Bank:

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- 25.1.1 personally;
- 25.1.2 by sending it through the post (by airmail where applicable) in a pre-paid letter addressed to such Member at his address as appearing in the Register of Members;
- 25.1.3 by sending it by pre-paid courier to or leaving it at the Member's address appearing in the Register of Members;
- 25.1.4 where applicable, by sending it by email or other mode of representing or reproducing words in a legible and non-transitory form or by sending an electronic record of it by electronic means, in each case to an address supplied by such Member for the purposes of communication in such manner; or
- 25.1.5 by publication of an electronic record of it on a website and notification of such publication (which shall include the address of the website, the place on the website where the document may be found, and how the document may be accessed on the website) by any of the methods set out in paragraphs 25.1.1, 25.1.2, 25.1.3 or 25.1.4 of this Bye-Law, or otherwise in accordance with the Companies Act.
- 25.2** Any notice or other document required to be given to a Member shall, with respect to any Shares held jointly by two (2) or more persons, be given to whichever of such persons is named first in the Register of Members, and notice or other document so given shall be deemed as sufficient service on or delivery to all holders of such Shares.
- 25.3** Any notice or other document shall be deemed to have been served on or delivered to any Member by the Bank:
- 25.3.1 if sent by personal delivery, at the time of delivery;
- 25.3.2 if sent by post, forty-eight (48) hours after it was put in the post;
- 25.3.3 if sent by pre-paid courier, twenty-four (24) hours after sending;
- 25.3.4 if sent by email or other mode of representing or reproducing words in a legible and non-transitory form or as an electronic record by electronic means, twelve (12) hours after sending; or
- 25.3.5 if published as an electronic record on a website, at the time that the notification of such publication shall be deemed to have been delivered to such Member,
- and in proving such service or delivery, it shall be sufficient to prove that the notice or document was properly addressed and stamped and put in the post, published on a website in accordance with the Companies Act and the provisions of these Bye-Laws, or sent by courier, facsimile, email or as an electronic record by electronic means, as the case may be, in accordance with these Bye-Laws.

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- 25.4** Each Member and each person becoming a Member subsequent to the adoption of these Bye-laws, by virtue of its holding or its acquisition and continued holding of a Share, as applicable, shall be deemed to have acknowledged and agreed that any notice or other document (excluding a share certificate) may be provided by the Bank by way of accessing them on a website instead of being provided by other means.
- 25.5** If any time, by reason of the suspension or curtailment of postal services within Bermuda or any other territory, the Bank is unable effectively to convene a general meeting by notices sent through the post, a general meeting may be convened by a notice advertised in at least one national newspaper published in the territory concerned and such notice shall be deemed to have been duly served on each person entitled to receive it in that territory on the day, or on the first day, on which the advertisement appears. In any such case the Bank shall send confirmatory copies of the notice by post if at least ten (10) clear days before the meeting the posting of notices to addresses throughout that territory again becomes practicable.
- 25.6** The Bank shall be under no obligation to send a notice or other document to the address shown for any particular Member in the Register of Members if the Board considers that the legal or practical problems under the laws of, or the requirements of any regulatory body or stock exchange in, the territory in which that address is situated, are such that it is necessary or expedient not to send the notice or document concerned to such Member at such address and may require a Member with such an address to provide the Bank with an alternative acceptable address for delivery of notices and other documents by the Bank.
- 25.7** Save as otherwise provided, the provisions of these Bye-Laws as to service of notices and other documents on Members shall mutatis mutandis apply to service or delivery of notices and other documents to the Bank or any Director or Secretary pursuant to these Bye-Laws.

26. Postponement or Cancellation of General Meeting

The Chairman or the Board may, and the Secretary on instruction from the Chairman or the Board shall, postpone or cancel any general meeting called in accordance with these Bye-laws (other than a meeting requisitioned under these Bye-laws) provided that notice of postponement or cancellation is given to each Member before the time for such meeting. Fresh notice of the date, time and place for the postponed or cancelled meeting shall be given to the Members in accordance with these Bye-laws.

27. Electronic Participation and Security at General Meetings

27.1 Members may participate in any general meeting by such telephonic, electronic or other communication facilities or means as permit all persons participating in the meeting to communicate with each other simultaneously and instantaneously, and

participation in such a meeting shall constitute presence in person at such meeting.

- 27.2 The Board may, and at any general meeting the chairman of such meeting may, make any arrangement and impose any requirement or restriction it or he considers appropriate to ensure the security of a general meeting including, without limitation, requirements for evidence of identity to be produced by those attending the meeting, the searching of their personal property and the restriction of items that may be taken into the meeting place. The Board and, at any general meeting, the chairman of such meeting are entitled to refuse entry to a person who refuses to comply with any such arrangements, requirements or restrictions.

28. Quorum at General Meetings

- 28.1 At any general meeting two or more persons present in person at the start of the meeting and representing in person or by proxy in excess of 25% of the total issued voting Shares in the Bank shall form a quorum for the transaction of business.
- 28.2 If within half an hour from the time appointed for the meeting a quorum is not present, then, in the case of a meeting convened on a requisition, the meeting shall be deemed cancelled and, in any other case, the meeting shall stand adjourned to the same day one (1) week later, at the same time and place or to such other day, time or place as the Secretary may determine. Unless the meeting is adjourned to a specific date, place and time announced at the meeting being adjourned, fresh notice of the date, place and time for the resumption of the adjourned meeting shall be given to each Member entitled to attend and vote thereat in accordance with these Bye-laws.

29. Chairman to Preside at General Meetings

- 29.1 The Chairman, if there be one, and if not the Vice-Chairman, if there be one, shall act as chairman at all general meetings at which such person is present. In their absence, a chairman of the meeting shall be appointed or elected by those present at the meeting and entitled to vote.
- 29.2 The Board and the chairman of any general meeting may make any arrangement and impose any requirement or restriction it or he considers appropriate to ensure the security of a general meeting including, without limitation, requirements for evidence of identity to be produced by those attending the meeting, the searching of their personal property and the restriction of items that may be taken into the meeting place. The Board and the chairman of any general meeting shall be entitled to refuse entry to a person who refuses to comply with any such arrangements, requirements or restrictions.

- 29.3 At any general meeting if an amendment is proposed to any resolution under consideration and the chairman of the meeting rules on whether the proposed amendment is out of order, the proceedings on the substantive resolution shall not be invalidated by any error in such ruling.

30. Voting on Resolutions

- 30.1 Subject to the Companies Act and these Bye-laws, any question proposed for the consideration of the Members at any general meeting shall be decided by the affirmative votes of a majority of the votes cast in accordance with these Bye-laws and in the case of an equality of votes the resolution shall fail.
- 30.2 Notwithstanding any other provisions of these Bye-Laws to the contrary, the following matters, except to the extent any proposal in respect of such a matter has received the prior approval of the Board, shall require the affirmative vote of not less than two-thirds of all voting rights attached to all issued and outstanding Shares:
- (a) removal of a Director other than for cause;
 - (b) the approval of an amalgamation, merger or consolidation with or into any other person, arrangement, reconstruction or sale, lease, conveyance, exchange or other transfer of all or substantially all the Bank's assets, or in each case, an equivalent transaction;
 - (c) commencement of proceedings seeking winding-up, liquidation or reorganisation of the Bank.
- 30.3 At any general meeting if an amendment is proposed to any resolution under consideration and the chairman of the meeting rules on whether or not the proposed amendment is out of order, the proceedings on the substantive resolution shall not be invalidated by any error in such ruling.

31. Restrictions on Voting Rights

- 31.1 In this Bye-Law unless the context otherwise requires:

“**Relevant Shareholder**” means any person who is not Bermudian as defined in the Companies Act who is interested in Shares which constitute more than 40% of all Shares then issued and outstanding.

“**Relevant Shares**” means those Shares in which a Relevant Shareholder has an interest which constitute more than 40% of all Shares then issued and outstanding and which are in excess of that 40% interest.

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- 31.2 A Relevant Shareholder shall not be entitled to vote the Relevant Shares at any general meeting of the Bank without the prior written approval of the Minister of Finance.
- 31.3 In this Bye-Law the word “interest” means (and “interests” and “interested in Shares” shall be construed accordingly) any interest of any kind whatsoever in Shares including but not limited to the following:
- (a) any interest in Shares comprised in property held on trust;
 - (b) any contractual right to purchase Shares whether for cash or other consideration;
 - (c) any interest by virtue of any right or obligation (whether subject to conditions or not) to exercise any right conferred by the holding of Shares including but not limited to voting rights or any entitlement to control the exercise of any such right;
 - (d) any right to call for delivery of Shares;
 - (e) the right to acquire an interest in the Shares or an obligation to take an interest in Shares; or
 - (f) the power to dispose of Shares.

PROVIDED THAT:

- (g) persons having a joint interest shall be taken each of them to have that interest;
- (h) a person shall be taken to be interested in any Shares in which an associate (within the meaning of the Banks Act) of that person is interested;
- (i) a person shall be interested in Shares if a body corporate is interested in them and:
 - (i) that body corporate or its directors are accustomed to act in accordance with the directions or instructions of that person; or
 - (ii) that person is entitled by virtue of any right or obligation (whether subject to conditions or not) to exercise or control the exercise of one third or more of the voting power at general meetings of that body corporate, and where such body corporate is entitled to control the exercise of any of the voting power at general meetings of another body corporate such voting power shall be taken to be exercisable by that person.

PROVIDED ALSO THAT the following interests shall be disregarded if the person in question is under any obligation to exercise or control the exercise of the voting rights of the Shares at the instance of any other person:

- (j) any interest of a custodian trustee or a bare trustee;
- (k) any interest of a licensed bank or other financial institution held by way of security for the purposes of a transaction entered into in the ordinary course of banking business;
- (l) an interest of a personal representative of any estate;
- (m) any interest of a person arising by reason only that such person has been appointed a proxy to vote at a specified meeting of shareholders and at any adjournment of that meeting or has been appointed by a body corporate to act as its representative at any meeting of shareholders;
- (n) any interest of any underwriter or sub-underwriter in any offer of Shares provided the agreement or interest is confined to that purpose and any matters incidental to it;
- (o) any interest of any market maker in the Shares which has been approved by the Board provided the interest is confined to that purpose and any matters incidental to it;
- (p) any interest as a beneficiary under a pension or retirement benefits scheme;
- (q) the interests of any subsidiary of the Bank.

32. Power to Demand a Vote on a Poll

32.1 Notwithstanding the foregoing, a poll may be demanded by any of the following persons:

- (a) the chairman of such meeting;
- (b) at least three Members present in person or represented by proxy;
- (c) any Member or Members present in person or represented by proxy and holding between them not less than one-tenth of the total voting rights of all the Members having the right to vote at such meeting; or
- (d) any Member or Members present in person or represented by proxy holding Shares in the Bank conferring the right to vote at such meeting, being Shares on which an aggregate sum has been paid up equal to not less than

one-tenth of the total amount paid up on all such Shares conferring such right.

- 32.2 Where a poll is demanded, subject to any rights or restrictions for the time being lawfully attached to any class of Shares, every person present at such meeting shall have one vote for each Share of which such person is the holder or for which such person holds a proxy and such vote shall be counted by ballot as described herein, or in the case of a general meeting at which one or more Members are present by telephone, electronic or other communication facilities or means, in such manner as the chairman of the meeting may direct and the result of such poll shall be deemed to be the resolution of the meeting at which the poll was demanded and shall replace any previous resolution upon the same matter which has been the subject of a show of hands. A person entitled to more than one vote need not use all his votes or cast all the votes he uses in the same way.
- 32.3 A poll demanded for the purpose of electing a chairman of the meeting or on a question of adjournment shall be taken forthwith. A poll demanded on any other question shall be taken at such time and in such manner during such meeting as the chairman (or acting chairman) of the meeting may direct. Any business other than that upon which a poll has been demanded may be conducted pending the taking of the poll.
- 32.4 Where a vote is taken by poll, each person physically present and entitled to vote shall be furnished with a ballot paper on which such person shall record his vote in such manner as shall be determined at the meeting having regard to the nature of the question on which the vote is taken. Each ballot paper shall be signed or initialed or otherwise marked so as to identify the voter and the registered holder in the case of a proxy. Each person present by telephone, electronic or other communication facilities or means shall cast his vote in such manner as the chairman of the meeting shall direct. At the conclusion of the poll, the ballot papers and votes cast in accordance with such directions shall be examined and counted by one or more scrutineers appointed by the chairman of the meeting for the purpose. The result of the poll shall be declared by the chairman of the meeting.

33. Voting by Joint Holders of Shares

In the case of joint holders, the vote of the senior who tenders a vote (whether in person or by proxy) shall be accepted to the exclusion of the votes of the other joint holders, and for this purpose seniority shall be determined by the order in which the names stand in the Register of Members.

34. Instrument of Proxy

- 34.1 A Member may appoint a proxy by (a) an instrument appointing a proxy in writing in substantially the following form or such other form as the Board may determine from time to time:

Proxy

[] (the “Bank”)

I/We, [insert name(s) here], being a [Member/holder of shares] of the Bank with [number] shares, HEREBY APPOINT [name] of [address] or failing him, [name] of [address] to be my/our proxy to vote for me/us at the meeting of the Members held on the [] day of [], 20[] and at any adjournment thereof. (Any restrictions on voting to be inserted here.)

Signed this [] day of [], 20[]

Member(s)

or (b) such telephonic, electronic or other means as may be approved by the Board.

- 34.2 In respect of Shares held by the BSD Nominee, the instrument of proxy shall be in such form as required by the BSD Regulations and shall, if so required by the BSD Regulations allow for the BSD Account Holder for whom the Shares are held by the BSD Nominee to appoint an alternative person as proxy in place of the person named in the instrument of proxy where relevant. The Bank shall issue and send to each BSD Account Holder such an instrument of proxy in respect of that BSD Account Holder’s Shares on behalf of and in the name of the BSD Nominee, which instrument of proxy need not be signed on behalf of the BSD Nominee. Any proxy appointed pursuant to such an instrument of proxy shall be afforded the opportunity to attend, speak and vote at meetings as though such person were an individual Member and the registered holder of the Shares for which the proxy is appointed.
- 34.3 A Member who is the holder of two or more Shares may appoint more than one proxy to represent him and vote on his behalf in respect of different Shares.
- 34.4 The decision of the chairman of any general meeting as to the validity of any appointment of a proxy shall be final.
- 34.5 A Member may appoint a standing proxy by depositing at the registered office of the Bank a proxy in an appropriate form and such proxy shall be valid for any and all matters to be approved by Members pursuant to general meetings until notice

of revocation is received by the Secretary at the office of the Bank. Where a standing proxy exists, its operation shall be deemed to have been suspended at any general meeting at which the Member is present or in respect to which the Member has specially appointed a proxy. The Bank may from time to time require such evidence as it shall deem necessary as to the due execution and continuing validity of a standing proxy and the operation of that standing proxy shall be deemed to be suspended until the Bank has received and is satisfied with the requested evidence.

35. Representation of Corporate Member

- 35.1 A corporation which is a Member may, by written instrument, authorise such person or persons as it thinks fit to act as its representative at any meeting and any person so authorised shall be entitled to exercise the same powers on behalf of the corporation which such person represents as that corporation could exercise if it were an individual Member, and that Member shall be deemed to be present in person at any such meeting attended by its authorised representative or representatives.
- 35.2 Notwithstanding the foregoing, the chairman of the meeting may accept such assurances as he thinks fit as to the right of any person to attend and vote at general meetings on behalf of a corporation which is a Member.

36. Adjournment of General Meeting

- 36.1 The chairman of any general meeting at which a quorum is present may with the consent of Members holding a majority of the voting rights of those Members present in person or by proxy (and shall if so directed by Members holding a majority of the voting rights of those Members present in person or by proxy), adjourn the meeting.
- 36.2 In addition, the chairman of the meeting may adjourn the meeting to another time and place without such consent or direction if it appears to him that:
- (a) it is likely to be impracticable to hold or continue that meeting because of the number of Members wishing to attend who are not present;
 - (b) the unruly conduct of persons attending the meeting prevents, or is likely to prevent, the orderly continuation of the business of the meeting; or
 - (c) an adjournment is otherwise necessary so that the business of the meeting may be properly conducted.
- 36.3 Unless the meeting is adjourned to a specific date, place and time announced at the meeting being adjourned, fresh notice of the date, place and time for the re-

sumption of the adjourned meeting shall be given to each Member entitled to attend and vote thereat in accordance with these Bye-laws.

37. Written Resolutions of the Members Not Permitted

Notwithstanding any provision of the Companies Act, the Members may adopt resolutions only at general meetings held in accordance with these Bye-laws and not by written resolution.

38. Directors Attendance at General Meetings

The Directors shall be entitled to receive notice of, attend and be heard at any general meeting.

DIRECTORS AND OFFICERS

39. Election of Directors

39.1 The Board shall consist of such number of Directors being not less than six Directors and not more than such maximum number of Directors, not exceeding twelve Directors, as the Board may from time to time determine.

39.2 Only persons who are proposed in accordance with this Bye-law shall be eligible for appointment or election as Directors at general meetings. A person may be proposed for election or appointment as a Director at a general meeting either by the Board or by one or more Members holding Shares which in the aggregate carry not less than 5% of the voting rights in respect of the election of Directors. Where any person, other than a person proposed for election or appointment as a Director by the Board, is to be proposed for appointment or election as a Director, written notice of the proposal must be given to the Bank, and of his willingness to serve as a Director, as follows. Where a Director is to be appointed or elected:

- (a) at an annual general meeting, such notice must be given not less than 90 days nor more than 120 days before the anniversary of the last annual general meeting prior to the giving of the notice or, in the event the annual general meeting is called for a date that is not 30 days before or after such anniversary the notice must be given not later than 10 days following the earlier of the date on which notice of the annual general meeting was posted to Members or the date on which public disclosure of the date of the annual general meeting was made; and
- (b) at a special general meeting, such notice must be given not later than 10 days following the earlier of the date on which notice of the special general meeting was posted to Members or the date on which public disclosure of the date of the special general meeting was made.

39.3 Where the number of persons validly proposed for appointment or election as a Director is not greater than the number of Directors to be appointed or elected, the chairman of the meeting shall declare such persons appointed. Where the number of persons validly proposed for appointment or election as a Director is greater than the number of Directors to be appointed or elected, the persons receiving the most votes (up to the number of Directors to be elected) shall be elected as Directors, and an absolute majority of the votes cast shall not be a prerequisite to the election of such Directors.

39.4 At any general meeting the Members may authorise the Board to fill any vacancy in their number left unfilled at a general meeting.

40. Single Class of Directors

The Board shall consist of a single class of Directors.

41. Term of Office of Directors

Each Director shall hold office until the next annual general meeting, subject to his office being vacated pursuant to Bye-law 44.

42. Alternate Directors Not Permitted

Without prejudice to the power of Directors to appoint another Director to represent him and to vote on his behalf at any meeting of the Board in accordance with section 91A of the Companies Act, no person may be appointed by the Members, the Board or any Director to act as a Director in the alternative to any Director.

43. Removal of Directors

43.1 Subject to any provision to the contrary in these Bye-laws, the Members entitled to vote for the election of Directors may, at any special general meeting convened and held in accordance with these Bye-laws, remove a Director, provided that the notice of any such meeting convened for the purpose of removing a Director shall contain a statement of the intention so to do and be served on such Director not less than 14 days before the meeting and at such meeting the Director shall be entitled to be heard on the motion for such Director's removal.

43.2 Where a Director is to be removed for cause, any vote on such removal shall be decided by the affirmative votes of a majority of the votes cast in accordance with Bye-law 30.1, and where a Director is to be removed without cause and without the prior approval of the Board, any vote on such removal shall require the affirmative vote of not less than two-thirds of all voting rights attached to all issued and outstanding Shares in accordance with Bye-law 30.2.

- 43.3 If a Director is removed from the Board under the provisions of this Bye-law the Members may fill the vacancy at the meeting at which such Director is removed. In the absence of such election or appointment, the Board may fill the vacancy.
- 43.4 For the purposes of Bye-law 30.2 and this Bye-law, “cause” shall mean a conviction for a criminal offence involving dishonesty or engaging in conduct which brings the Director or the Bank into disrepute or which results in material financial detriment to the Bank.

44. Vacancy in the Office of Director

- 44.1 The office of Director shall be vacated if the Director:
- (a) is removed from office pursuant to these Bye-laws or is prohibited from being a Director by applicable law;
 - (b) is or becomes bankrupt, or makes any arrangement or composition with his creditors generally;
 - (c) is or becomes of unsound mind or dies; or
 - (d) resigns his office by notice to the Bank.
- 44.2 The Members in general meeting or the Board shall have the power to appoint any person as a Director to fill a vacancy on the Board occurring as a result of the death, disability, disqualification or resignation of any Director or as a result of an increase in the size of the Board.
- 44.3 The term of office of any Director appointed to the Board to fill a casual vacancy, or otherwise appointed as an additional member of the Board, shall expire at the next annual general meeting.

45. Remuneration of Directors

The remuneration (if any) of the Directors shall be determined by the Board. The Directors may also be paid all travel, hotel and other expenses properly incurred by them in attending and returning from the meetings of the Board, any committee appointed by the Board, general meetings, or in connection with the business of the Bank or their duties as Directors generally.

46. Defect in Appointment

All acts done in good faith by the Board, any Director, a member of a committee appointed by the Board, any person to whom the Board may have delegated any of its powers, or any person acting as a Director shall, notwithstanding that it be afterwards discovered that there was some defect in the appointment or election of any Director or person acting as aforesaid, or that he or she was, or any of them were, disqualified, be as valid as if eve-

ry such person had been duly appointed or elected and was qualified to be a Director or act in the relevant capacity.

47. Directors to Manage Business

47.1 The business of the Bank shall be managed and conducted by the Board. In managing the business of the Bank, the Board may exercise all such powers of the Bank as are not, by the Companies Act or by these Bye-laws, required to be exercised by the Bank in general meeting.

47.2 Subject to these Bye-laws, the Board may delegate to any company, firm, person, or body of persons any power of the Board (including the power to sub-delegate).

48. Powers of the Board of Directors

Without limiting the authority of the Board under other provisions of these Bye-laws, the Board may:

- (a) appoint, suspend, or remove any manager, secretary, clerk, agent or employee of the Bank and may fix their remuneration and determine their duties;
- (b) exercise all the powers of the Bank to borrow money and to mortgage or charge or otherwise grant a security interest in its undertaking, property and uncalled capital, or any part thereof, and may issue debentures, debenture stock and other securities whether outright or as security for any debt, liability or obligation of the Bank or any third party;
- (c) appoint a person to the office of Chief Executive Officer of the Bank who shall, subject to the supervision of the Board, supervise and administer the general business and affairs of the Bank;
- (d) by power of attorney, appoint any company, firm, person or body of persons, whether nominated directly or indirectly by the Board, to be an attorney of the Bank for such purposes and with such powers, authorities and discretions (not exceeding those vested in or exercisable by the Board) and for such period and subject to such conditions as it may think fit and any such power of attorney may contain such provisions for the protection and convenience of persons dealing with any such attorney as the Board may think fit and may also authorise any such attorney to sub-delegate all or any of the powers, authorities and discretions so vested in the attorney;
- (e) procure that the Bank pays all expenses incurred in promoting the Bank and listing and maintaining any listing of Shares;

- (f) delegate any of its powers (including the power to sub-delegate) to a committee appointed by the Board which may consist partly or entirely of non-Directors, provided that every such committee shall conform to such directions as the Board shall impose on them and provided further that the meetings and proceedings of any such committee shall be governed by these Bye-laws regulating the meetings and proceedings of the Board, so far as the same are applicable and are not superseded by directions imposed by the Board;
- (g) delegate any of its powers (including the power to sub-delegate) to any person on such terms and in such manner as the Board may see fit;
- (h) subject to Bye-law 30.2(c), present any petition and make any application in connection with the liquidation or reorganisation of the Bank;
- (i) in connection with the issue of any Share, pay such commission and brokerage as may be permitted by law; and
- (j) authorise any company, firm, person or body of persons to act on behalf of the Bank for any specific purpose and in connection therewith to execute any deed, agreement, document or instrument on behalf of the Bank.

49. Register of Directors and Officers

The Board shall cause to be kept in one or more books at the registered office of the Bank a Register of Directors and Officers and shall enter therein the particulars required by the Companies Act.

50. Appointment of Officers

The Officers of the Bank shall include a Chief Executive Officer, who may be a Director. The Board shall appoint this Officer and may appoint such other Officers (who may or may not be Directors) as the Board may determine.

51. Appointment of Secretary

The Secretary shall be appointed by the Board from time to time.

52. Duties of Chief Executive Officer and Other Officers

52.1 The Chief Executive Officer shall exercise a general supervision over the affairs of the Bank and, subject to such restrictions as the Board may impose from time to time, his responsibilities for such supervision shall include the following:

- (a) the keeping of proper records of account;
- (b) the safe custody of the cash and securities of the Bank;

- (c) the administration of credit;
 - (d) the appointment and dismissal of personnel other than officers of the rank of Executive Vice President and above;
 - (e) negotiation of interest rates and charges;
 - (f) the authorisation of expenses necessary for the operation of the Bank;
 - (g) arrangements with correspondent banks; and
 - (h) negotiating and contracting with persons outside the Bank (including consultants, correspondents and agents) required in connection with the Bank's business.
- 52.2 Notwithstanding the foregoing, the Chief Executive Officer shall have power to delegate any responsibilities to any person he or she sees fit.
- 52.3 The Board may from time to time entrust to and confer upon the Chief Executive Officer any of the powers exercisable by the Board upon such terms and conditions and with such restrictions that they think fit and may from time to time revoke, withdraw, alter and vary all or any of such terms and conditions and without limiting the generality of the foregoing the Board may entrust to and confer upon the Chief Executive Officer such of the Board's powers as may be necessary for the day to day operations of the Bank.
- 52.4 The Board may from time to time require the Chief Executive Officer to submit to the Board such reports as the Board thinks fit for the purpose of enabling the Board to exercise control over the operations of the Bank.
- 52.5 Officers other than the Chief Executive Officer shall have such powers and perform such duties in the management, business and affairs of the Bank as may be delegated to them by the Board from time to time.

53. Remuneration of Officers

The Officers shall receive such remuneration as the Board may determine.

54. Conflicts of Interest

- 54.1 Any Director, or any Director's firm, partner or any company with whom any Director is associated, may act in any capacity for, be employed by or render services to the Bank and such Director or such Director's firm, partner or company shall be entitled to remuneration as if such Director were not a Director. Nothing herein contained shall authorise a Director or Director's firm, partner or company to act as Auditor to the Bank.

- 54.2 A Director who is directly or indirectly interested in a contract or proposed contract or arrangement with the Bank shall declare the nature of such interest as required by the Companies Act.
- 54.3 Following a declaration being made pursuant to this Bye-law, and unless disqualified by the chairman of the relevant Board meeting (or where the interest is that of the chairman of the meeting, disqualified by a resolution of the other Directors present) in respect of any material contract or proposed material contract or arrangement, a Director may vote in respect of any contract or proposed contract or arrangement in which such Director is interested and may be counted in the quorum for such meeting. For the purposes hereof, material in relation to any contract or proposed contract shall be construed as relating to the materiality of that contract or proposed contract in relation to the business of the Bank to which the declaration of the nature of the interest should be made. For the purpose of this paragraph a Director shall not be deemed to be materially interested in any such matter by reason only of his being a shareholder of the Bank or by reason of his being a shareholder holding less than 10% of any party interested in such matter.

55. Indemnification and Exculpation of Directors and Officers

- 55.1 The Directors, Secretary and other Officers (such term to include any person appointed to any committee by the Board) for the time being acting in relation to any of the affairs of the Bank or any subsidiary thereof and the liquidator or trustees (if any) for the time being acting in relation to any of the affairs of the Bank or any subsidiary thereof, and every one of them, and their heirs, executors and administrators, shall be indemnified and secured harmless out of the assets of the Bank from and against all actions, costs, charges, losses, damages and expenses which they or any of them, their heirs, executors or administrators, shall or may incur or sustain by or by reason of any act done, concurred in or omitted in or about the execution of their duty, or supposed duty, or in their respective offices or trusts, and none of them shall be answerable for the acts, receipts, neglects or defaults of the others of them or for joining in any receipts for the sake of conformity, or for any bankers or other persons with whom any monies or effects belonging to the Bank shall or may be lodged or deposited for safe custody, or for insufficiency or deficiency of any security upon which any monies of or belonging to the Bank shall be placed out on or invested, or for any other loss, misfortune or damage which may happen in the execution of their respective offices or trusts, or in relation thereto, provided that this indemnity shall not extend to any matter in respect of any fraud or dishonesty which may attach to any of the said persons. Each Member agrees to waive any claim or right of action such Member might have, whether individually or by or in the right of the Bank against any Director or Officer on account of any action taken by such Director or Officer, or the failure of such Director or Officer to take any action in the performance of his duties with or for the Bank or any subsidiary thereof, provided that, such waiver

shall not extend to any matter in respect of any fraud or dishonesty in relation to the Bank which may attach to such Director or Officer.

- 55.2 The Bank may purchase and maintain insurance for the benefit of any Director or Officer against any liability incurred by him under the Companies Act in his capacity as a Director, Officer or director or officer of any subsidiary of the Bank, or indemnifying such Director, Officer or director or officer of any subsidiary of the Bank in respect of any loss arising or liability attaching to him by virtue of any rule of law in respect of any negligence, default, breach of duty or breach of trust of which the Director, Officer or director or officer of any subsidiary of the Bank may be guilty in relation to the Bank or any subsidiary thereof.
- 55.3 The Bank may advance monies to a Director, Officer or director or officer of any subsidiary of the Bank for the costs, charges and expenses incurred by the Director, Officer or director or officer of any subsidiary of the Bank in defending any civil or criminal proceedings against them, on condition that the Director, Officer or director or officer of any subsidiary of the Bank shall repay the advance if any allegation of fraud or dishonesty is proved against him.

MEETINGS OF THE BOARD OF DIRECTORS

56. Board Meetings

The Board may meet for the transaction of business, adjourn and otherwise regulate its meetings as it sees fit. Subject to these Bye-laws, a resolution put to the vote at a meeting of the Board shall be carried by the affirmative votes of a majority of the votes cast and in the case of an equality of votes the resolution shall fail.

57. Notice of Board Meetings

A Director may, and the Secretary on the requisition of a Director shall, at any time summon a meeting of the Board. Notice of a meeting of the Board shall be deemed to be duly given to a Director if it is given to such Director verbally (including in person or by telephone) or otherwise communicated or sent to such Director by post, electronic means or other mode of representing words in a visible form at such Director's last known address or in accordance with any other instructions given by such Director to the Bank for this purpose.

58. Electronic Participation in Meetings

Directors may participate in any meeting by such telephonic, electronic or other communication facilities or means as permit all persons participating in the meeting to communicate with each other simultaneously and instantaneously, and participation in such a meeting shall constitute presence in person at such meeting.

59. Quorum at Board Meetings

The quorum necessary for the transaction of the business of the Board shall be five (5) Directors, a majority of whom shall be independent non-executive Directors.

60. Board to Continue in the Event of Vacancy

The Board may act notwithstanding any vacancy in its number but, if and so long as its number is reduced below the number fixed by these Bye-laws as the quorum necessary for the transaction of business at meetings of the Board, the continuing Directors or Director may act for the purpose of (a) summoning a general meeting or (b) preserving the assets of the Bank.

61. Chairman to Preside

Unless otherwise agreed by a majority of the Directors attending, the Chairman, if there be one, and if not, the Vice-Chairman, if there be one, shall act as chairman at all meetings of the Board at which such person is present. In their absence a chairman of the meeting shall be appointed or elected by the Directors present at the meeting.

62. Written Resolutions

A resolution signed by all the Directors, which may be in counterparts, shall be as valid as if it had been passed at a meeting of the Board duly called and constituted, such resolution to be effective on the date on which the last Director signs the resolution.

63. Validity of Prior Acts of the Board

No regulation or alteration to these Bye-laws made by the Bank in general meeting shall invalidate any prior act of the Board which would have been valid if that regulation or alteration had not been made.

CORPORATE RECORDS**64. Minutes**

The Board shall cause minutes to be duly entered in books provided for the purpose:

- (a) of all elections and appointments of Officers;
- (b) of the names of the Directors present at each meeting of the Board and of any committee appointed by the Board; and
- (c) of all resolutions and proceedings of general meetings of the Members, meetings of the Board, and meetings of committees appointed by the Board.

65. Place Where Corporate Records Kept

Minutes prepared in accordance with the Companies Act and these Bye-laws shall be kept by the Secretary at the registered office of the Bank.

66. Form and Use of Seal

66.1 The Bank may adopt a seal in such form as the Board may determine. The Board may adopt one or more duplicate seals for use in or outside Bermuda.

66.2 A seal may, but need not, be affixed to any deed, instrument or document, and if the seal is to be affixed thereto, it shall be attested by the signature of (a) any Director; (b) any Officer; (c) the Secretary; or (d) any person authorised by the Board for that purpose.

66.3 Any officer may, but need not, affix the seal of the Bank to certify the authenticity of any copies of documents.

ACCOUNTS**67. Books of Account**

67.1 The Board shall cause to be kept proper records of account with respect to all transactions of the Bank and in particular with respect to:

- (a) all sums of money received and expended by the Bank and the matters in respect of which the receipt and expenditure relate;
- (b) all sales and purchases of goods by the Bank; and
- (c) all assets and liabilities of the Bank.

67.2 Such records of account shall be kept at the registered office of the Bank, or subject to the Companies Act, at such other place as the Board thinks fit and shall be available for inspection by the Directors during normal business hours.

68. Financial Year End

The financial year end of the Bank may be determined by resolution of the Board and failing such resolution shall be the 31st of December in each year.

AUDITS**69. Annual Audit**

Subject to any rights to waive laying of accounts or appointment of an Auditor pursuant to the Companies Act, the accounts of the Bank shall be audited on an annual basis.

70. Appointment of Auditor

- 70.1 Subject to the Companies Act, at the annual general meeting or at a subsequent special general meeting in each year, the Members shall appoint an Auditor to the Bank.
- 70.2 The Auditor must satisfy any applicable requirements of (a) any Exchange and (b) the Banks Act. No Director, Officer or employee of the Bank shall, during his continuance in office, be eligible to act as an Auditor of the Bank.

71. Remuneration of Auditor

The remuneration of the Auditor shall be fixed by the Bank in general meeting or in such manner as the Members may determine. In the case of an Auditor appointed pursuant to Bye-law 76, the remuneration of the Auditor shall be fixed by the Board.

72. Duties of Auditor

- 72.1 The financial statements provided for by these Bye-laws shall be audited by the Auditor in accordance with generally accepted auditing standards. The Auditor shall make a written report thereon in accordance with generally accepted auditing standards.
- 72.2 The generally accepted auditing standards referred to in this Bye-law may be those of a country or jurisdiction other than Bermuda or such other generally accepted auditing standards as may be provided for in the Companies Act. If so, the financial statements and the report of the Auditor shall identify the generally accepted auditing standards used.

73. Access to Records

The Auditor shall at all reasonable times have access to all books kept by the Bank and to all accounts and vouchers relating thereto, and the Auditor may call on the Directors or Officers of the Bank for any information in their possession relating to the books or affairs of the Bank.

74. Financial Statements

Subject to any rights to waive laying of accounts pursuant to the Companies Act, financial statements as required by the Companies Act shall be provided to the Members on an annual basis.

75. Distribution of Auditor's Report

The report of the Auditor shall be laid before the Members at the annual general meeting.

76. Replacement of Auditor

If the Auditor resigns or becomes incapable of acting by reason of illness or other disability at a time when the Auditor's services are required, the vacancy thereby created shall be filled in accordance with the Companies Act.

VOLUNTARY WINDING-UP AND DISSOLUTION**77. Winding-Up**

If the Bank shall be wound up the liquidator may, with the sanction of a resolution of the Members, divide amongst the Members in specie or in kind the whole or any part of the assets of the Bank (whether they shall consist of property of the same kind or not) and may, for such purpose, set such value as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the Members or different classes of Members. The liquidator may, with the like sanction, vest the whole or any part of such assets in the trustees upon such trusts for the benefit of the Members as the liquidator shall think fit, but so that no Member shall be compelled to accept any shares or other securities or assets whereon there is any liability.

CHANGES TO CONSTITUTION**78. Changes to Bye-laws**

78.1 Subject to Bye-law 78.2, no Bye-law may be rescinded, altered or amended and no new Bye-law may be made until the same has been approved by a resolution of the Board and by a resolution of the Members.

78.2 Bye-laws 30.2, 31, 39, 40, 41, 43, and 78 may not be rescinded, altered or amended and no new Bye-law may be made which would have the effect of rescinding, altering or amending the provisions of such Bye-laws, until the same has been approved by a resolution of the Board including the affirmative vote of not less than 66% of the Directors then in office and by a resolution of the Members including the affirmative vote of not less than 66% of the votes attaching to all Shares in issue.

DESCRIPTION OF SECURITIES

REGISTERED UNDER SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of December 31, 2022, The Bank of N.T. Butterfield & Son Limited has the following securities registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

<u>Title of each class</u>	<u>Trading Symbol (s)</u>	<u>Name of each exchange on which registered</u>
Voting ordinary shares of par value BMS\$ 0.01 each	NTB	New York Stock Exchange
Voting ordinary shares of par value BMS\$ 0.01 each	NTB.BH	Bermuda Stock Exchange

Capitalized terms used but not defined herein have the meanings given to them in the Bank's annual report on Form 20-F for the year ended December 31, 2022.

DESCRIPTION OF SHARE CAPITAL

The following description of the Bank's share capital summarizes the material provisions of the Butterfield Act and of the bye-laws of the Bank. Such summaries are subject to, and are qualified in their entirety by reference to, all of the provisions of these documents and applicable law.

Share Capital

The authorized share capital of the Bank is divided into four classes of shares: (1) 2,000,000,000 ordinary shares, par value BMS\$0.01 each, (2) 6,000,000,000 non-voting ordinary shares, par value BMS\$0.01 each, (3) 110,200,001 preference shares, par value US\$0.01 each ("Dollar Preference Shares") and (4) 50,000,000 preference shares, par value £0.01 each (the "Sterling Preference Shares" and, together with the Dollar Preference Shares, the "preference shares"). As of December 31, 2022, there were 50,277,466 ordinary shares issued and outstanding and no non-voting ordinary shares or preference shares issued and outstanding.

Pursuant to the Bank's bye-laws, subject to any resolution of the shareholders to the contrary and to compliance with NYSE listing rules, the Board is authorized to issue any of the Bank's authorized but unissued shares. There are certain notification and prior approval requirements pursuant to the BDCA with respect to any person who seeks to become a significant shareholder or shareholder controller of the Bank.

Under the BDCA, any person who becomes a significant shareholder of a deposit-taking institution, which is defined to include persons, either individually or with associates, who (i) hold 5% or more of the shares in the institution or another company of which it is a subsidiary company; or (ii) is entitled to exercise, or control the exercise of, 5% or more of the voting power at any general meeting of the institution or of another company of which it is such a subsidiary, must notify the BMA in writing of that fact within seven days. Failure to provide the BMA with prompt and appropriate notice would constitute an offense that could result in a fine.

The BDCA prohibits a person from becoming a shareholder controller of any company licensed under the BDCA unless the person provides written notice to the BMA of his intent to do so and the BMA does not object. The definition of shareholder controller is set out in the BDCA but generally refers to a person who, among other things, either alone or with any associate or associates (within the meaning of the BDCA) (i) holds 10% or more of the shares in the licensed institution or another company of which it is a subsidiary company; or (ii) is entitled to exercise, or control the exercise of 10% or more of the voting power at any general meeting of the licensed institution or another company of which it is such a subsidiary.

A person who intends to become a shareholder controller, or a shareholder controller who intends to increase his shareholding/control, meaning generally, ownership of shares or the ability to exercise or control the exercise of voting rights attached to shares, beyond his present threshold, must provide written notice to the BMA that he intends to do so. It is an offense not to give this notice. The BMA may object to a person's notice of intent to become a shareholder controller of any description or to an existing shareholder controller seeking to increase their control where it appears to the BMA that, among other things, such person is not or is no longer a fit and proper person to be such controller of the institution. If the BMA objects, the BMA will provide such person with written notice of its objection.

In addition to these restrictions, pursuant to the Bank's bye-laws, any person who is not "Bermudian" (as such term is defined in the Companies Act) who is "interested" (as such term is defined in the bye-laws) in shares of the Bank which constitute more than 40% of all of the shares of the Bank then issued and outstanding shall not be entitled to vote the shares which are in excess of such 40% interest at any general meeting of the Bank without the prior written approval of the Minister of Finance.

Ordinary Shares

Rights of Holders of the Bank's Ordinary Shares

Holders of ordinary shares have no pre-emptive, redemption, conversion or sinking fund rights. Holders of ordinary shares are entitled to one vote per share on all matters submitted to a vote of holders of ordinary shares. Unless a different majority is required by law or by the Bank's bye-laws, resolutions to be approved by holders of ordinary shares require approval by the affirmative votes of a majority of votes cast at a general meeting at which a quorum is present.

In the event of our dissolution or winding up, the holders of ordinary shares are entitled to the surplus assets of the Bank, subject to any liquidation preference on any issued and outstanding preference shares.

Pursuant to the Bank's bye-laws, the following actions (each, a "Super-Majority Action") require approval by the affirmative vote of not less than two-thirds of all voting rights attached to all issued and outstanding shares, unless such Super-Majority Action has received prior approval by the Board: (i) removal of a director other than for cause; (ii) approval of an amalgamation, merger or consolidation with or into any other person, arrangement, reconstruction or sale, lease, conveyance, exchange or other transfer of all or substantially all the Bank's assets, or in each case, an equivalent transaction; and (iii) commencement of proceedings seeking winding-up, liquidation or reorganization of the Bank.

Pursuant to the Bank's bye-laws, certain bye-laws, including those relating to approval of a Super-Majority Action, may only be amended pursuant to an affirmative vote of not less than 66% of all directors then in office and by a resolution of shareholders including the affirmative vote of not less than 66% of the votes attaching to all shares in issue.

Reverse Share Split

On September 6, 2016, the Bank effected a 10:1 reverse share split of the ordinary shares such that: every 10 ordinary shares at par value BM \$0.01 consolidated into one ordinary share par value BM \$0.10, and the Bank's authorized share capital was immediately reduced such that the par value of each of the consolidated ordinary shares was reduced to BM \$0.01. No fractional ordinary shares were issued in connection with the reverse share split, and all such fractional interests were rounded down to the nearest whole number of ordinary shares. Shareholders who would have otherwise held a fractional share of the Bank's ordinary shares as a result of the reverse share split received a cash payment in lieu of such fractional ordinary share. Issued and outstanding share options and warrants were adjusted on the same basis and exercise prices adjusted accordingly.

Preference Shares

Pursuant to the Bank's bye-laws, the Board by resolution may provide for the issuance of preference shares in one or more series and to establish from time to time the number of preference shares to be included in each such series and to fix the terms, including the designation, powers, preferences, rights qualifications, limitations and restrictions of the preference shares of each series such that the authority of the Board with respect to each series shall include, but not be limited to, determination of, dividend rates, voting rights, conversion or exchange rights, redemption rights, liquidation rights and other relative participation, optional or other special rights, qualifications, limitations or restrictions as may be fixed by the Board without any further shareholder approval. Such rights, preferences, powers and limitations as may be established could have the effect of discouraging an attempt to obtain control of the Bank.

Dividend Rights

Under Bermuda law, a company may not declare or pay dividends if there are reasonable grounds for believing that: (i) the company is, or would after the payment be, unable to pay its liabilities as they become due; or (ii) that the realizable value of its assets would thereby be less than its liabilities. Under the Bank's bye-laws, each ordinary share is entitled to such dividends that the Board may from time to time declare.

Any cash dividends payable to holders of the ordinary shares listed on the NYSE will be paid to Computershare Inc., our transfer agent in the United States, for disbursement to those holders.

Although we expect to pay dividends according to our dividend policy, we may elect not to pay dividends. Any declarations of dividends will be at the discretion of the Board, subject to receipt of a letter of no objection from the BMA. In determining the amount of any future dividends, the Board may take into account: (1) our financial results; (2) our available cash, as well as anticipated cash requirements (including debt servicing); (3) our capital requirements, including the capital requirements of our subsidiaries; (4) contractual, legal, tax and regulatory restrictions on, and implications of, the payment of dividends by us to our shareholders; (5) general economic and business conditions; (6) restrictions applicable to us and our subsidiaries under Bermuda and other applicable laws, regulations and policies, including the requirement to obtain the a letter of no objection from the BMA regarding the payment of dividends on our ordinary shares; and (7) any other factors that the Board may deem relevant. Therefore, there can be no assurance that we will declare or pay any dividends to holders of the ordinary shares, or as to the amount of any such dividends.

Variation of Rights

If at any time the Bank has more than one class of shares, the rights attaching to any class, unless otherwise provided for by the terms of issue of the relevant class, may be varied either: (i) with the consent in writing of the holders of three-fourths of the issued shares of that class; or (ii) with the sanction of a resolution passed by a majority of the votes cast at a separate general meeting of the relevant class of shareholders at which a quorum consisting of at least two persons holding or representing in proxy one-third of the issued shares of the relevant class is present. The Bank's bye-laws specify that the creation or issue of shares ranking equally with existing shares will not, unless expressly provided by the terms of issue of the shares of that class, vary the rights attached to existing shares. In addition, the creation or issue of preference shares whether or not ranking prior to ordinary shares will not be deemed to vary the rights attached to ordinary shares or, subject to the terms of any other series of preference shares, to vary the rights attached to any other series of preference shares.

Transfer of Shares

Shares that are listed or admitted to trading on the NYSE or BSX shall be transferred in accordance with the rules and regulations of the applicable exchange. Subject to these restrictions, a holder of ordinary shares may transfer the title to all or any of his ordinary shares by completing a form of transfer in the form set out in the Bank's bye-laws (or as near thereto as circumstances admit) or in such other form as the Board may accept. The instrument of transfer must be signed by the transferor and transferee, although in the case of a fully paid share the Board may accept the instrument signed only by the transferor.

Differences in Corporate Law

We are incorporated under the laws of Bermuda. The laws applicable to Bermuda companies may differ in certain respects from the laws applicable to corporations incorporated in the United States. Within our discussions below of the Companies Act and the rights and obligations as set forth in the Butterfield Act and our bye-laws, we have summarized the significant differences between the rights of holders of our ordinary shares and the rights of holders of ordinary stock of a typical corporation incorporated under the laws of Delaware. This discussion does not purport to be a complete statement of the rights of holders of our ordinary shares under the Companies Act and the Butterfield Act and our bye-laws or the rights of holders of ordinary stock of a typical corporation under applicable Delaware law and a typical certificate of incorporation and bylaws.

Meetings of Shareholders

Under Bermuda law, a company is required to convene at least one general meeting of shareholders each calendar year (the "annual general meeting"). However, the shareholders may by resolution waive this requirement, either for a specific year or a specified number of years, or indefinitely. When the requirement has been so waived, any member may, on notice to the company, terminate the waiver, in which case an annual general meeting must be called.

Bermuda law provides that a special general meeting of shareholders may be called by the board of directors of a company and must be called upon the request of shareholders holding not less than one-tenth of the paid-up capital of the company carrying the right to vote at general meetings. Bermuda law also requires that shareholders be given at least five days' advance notice of a general meeting, but the accidental omission to give notice to any person does not invalidate the proceedings at a meeting. The Bank's bye-laws provide that the chairman or the Board may convene an annual general meeting or a special general meeting. Under the Bank's bye-laws, at least 21 days' notice of an annual general meeting or a special general meeting must be given to each shareholder entitled to attend and vote at such meeting. This notice requirement is subject to the ability to hold such meetings on shorter notice if such notice is agreed: (i) in the case of an annual general meeting by all of the shareholders entitled to attend and vote at such meeting; or (ii) in the case of a special general meeting by a majority in number of the shareholders entitled to attend and vote at the meeting holding not less than 95% in nominal value of the shares entitled to vote at such meeting. The quorum required for a general meeting of shareholders is two or more persons present in person at the start of the meeting and representing in person or by proxy in excess of 25% of the total issued voting shares. In addition, the Bank's bye-laws provide that shareholders must adhere to certain advance notice requirements with respect to business to be proposed at general meetings.

Pursuant to the Bank's bye-laws, Super-Majority Actions require approval by the affirmative vote of not less than two-thirds of all voting rights attached to all issued and outstanding shares, unless such Super-Majority Action has been approved by the Board. In addition, shareholders may not act by written consent under our bye-laws.

Variance from Delaware: In contrast to our bye-laws, which do not allow shareholders to act by written consent, stockholders of a Delaware corporation may act by written consent to elect directors unless the certificate of incorporation provides otherwise.

Access to Books and Records and Dissemination of Information

Members of the general public have a right to inspect the public documents of a company available at the office of the Registrar of Companies in Bermuda. These documents include the company's memorandum of association (or, in our case, the Butterfield Act), including its objects and powers, and certain alterations thereto, and the company's register of directors. The shareholders have the additional right to inspect the bye-laws of the company, minutes of general meetings and the company's audited financial statements, which must be presented to the annual general meeting. The register of members of a company is also open to inspection by shareholders and by members of the general public without charge. The register of members is required to be open for inspection for not less than two hours in any business day (subject to the ability of a company to close the register of members for not more than 30 days in a year). A company is required to maintain its share register in Bermuda but may, subject to the provisions of the Companies Act, establish a branch register outside of Bermuda. A company is required to keep at its registered office a register of directors and officers that is open for inspection for not less than two hours in any business day by members of the public without charge. Bermuda law does not, however, provide a general right for shareholders to inspect or obtain copies of any other corporate records.

Election and Removal of Directors

The Bank's bye-laws provide that the Board shall consist of not less than six directors and not more than such maximum number of directors, not exceeding 12, as the Board may determine. The Board currently consists of ten directors. The Board consists of a single class of directors.

In addition to the Board, only one or more shareholders holding in the aggregate at least 5% of the voting rights in relation to the election of directors may propose a person for election as a director. Such shareholder(s) must give notice of the intention to propose the person for election. Where a director is to be elected at an annual general meeting, the notice of such election must be given not less than 90 days nor more than 120 days before the anniversary of the last annual general meeting prior to the giving of the notice or, in the event the annual general meeting is called for a date that is not 30 days before or after such anniversary the notice must be given not later than 10 days following the earlier of the date on which notice of the annual general meeting was posted to shareholders or the date on which public disclosure of the date of the annual general meeting was made. Where a director is to be elected at a special general meeting, that notice must be given not later than 10 days following the earlier of the date on which notice of the special general meeting was posted to shareholders or the date on which public disclosure of the date of the special general meeting was made.

A director may be removed by the shareholders, provided notice of the shareholders meeting convened to remove the director is given to the director. The notice must contain a statement of the intention to remove the director and must be served on the director not less than 14 days before the meeting. The director is entitled to attend the meeting and be heard on the motion for his removal. Where a director is to be removed for cause (as such term is defined in the Bank's bye-laws), the resolution shall require the affirmative votes of a majority of the votes cast. Where a director is to be removed without cause and without prior approval of the Board, the resolution shall require the affirmative votes of not less than two-thirds of all voting rights attached to all issued and outstanding shares.

Variance from Delaware: In contrast to our bye-law requirement of at least six directors, a corporation incorporated in Delaware must have at least one director. In addition, any or all of the directors on a non-classified board of a Delaware corporation may be removed, with or without cause, by the holders of a majority of the shares entitled to vote at an election of directors and, in the case of a classified board, the stockholders may effect removal of any or all directors only for cause unless the certificate of incorporation otherwise provides.

Proceedings of the Board of Directors

The Bank's bye-laws provide that our business is to be managed and conducted by the Board. There is no requirement in the Bank's bye-laws or Bermuda law that directors hold any of the Bank's shares. There is also no requirement in the Bank's bye-laws or Bermuda law that the directors must retire at a certain age. The quorum for meetings of the Board is five directors, a majority of whom must be independent non-executive directors.

Provided a director discloses a direct or indirect interest in any material contract or proposed material contract or arrangement with us as required by Bermuda law, such director is entitled to vote in respect of any such contract or arrangement in which he or she is interested unless he or she is disqualified from voting by the chairman of the relevant board of directors meeting.

Indemnification of Directors and Officers

Section 98 of the Companies Act provides generally that a Bermuda company may indemnify its directors, officers and auditors against any liability which by virtue of any rule of law would otherwise be imposed on them in respect of any negligence, default, breach of duty or breach of trust, except in cases where such liability arises from fraud or dishonesty of which such director, officer or auditor may be guilty in relation to the company. Section 98 further provides that a Bermuda company may indemnify its directors, officers and auditors against any liability incurred by them in defending any proceedings, whether civil or criminal, in which judgment is awarded in their favor or in which they are acquitted or granted relief by the Supreme Court of Bermuda pursuant to section 281 of the Companies Act.

We have adopted provisions in our bye-laws that provide that we shall indemnify our officers and directors in respect of their actions and omissions, except in respect of their fraud or dishonesty. In addition, under our bye-laws, each shareholder agrees to waive any claim or right of action such shareholder might have, whether individually, or by or in the right of the Bank, against any director or officer, on account of any action taken by such director or officer or the failure of such director or officer to take any action in the performance of his duties with or for the Bank or any subsidiary thereof, provided that such waiver shall not extend to any matter in respect of any fraud or dishonesty in relation to the Bank which may attach to such director or officer. Section 98A of the Companies Act permits us to purchase and maintain insurance for the benefit of any officer or director in respect of any loss or liability attaching to him in respect of any negligence, default, breach of duty or breach of trust, whether or not we may otherwise indemnify such officer or director. We have purchased and maintain a directors' and officers' liability insurance policy for such a purpose.

Insofar as indemnification for liabilities arising under the US Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the US Securities Act of 1933, as amended, and is, therefore, unenforceable.

Amendment of Butterfield Act and Bye-laws

The Butterfield Act may be amended by a resolution passed at a general meeting of shareholders, provided that consent for the proposed amendment has been obtained from the minister responsible for administering the Companies Act, prior to the notice of the shareholders meeting being given to the shareholders. Notwithstanding the foregoing, in the case of certain bye-laws, such as the bye-laws relating to: (i) restrictions on the voting rights of any person who is not Bermudian, (ii) the election of directors, (iii) the class of directors, (iv) the term of directors, (v) the removal of directors, (vi) the Super-Majority Actions and (vii) the approval requirements in respect of amendments to the bye-laws, the required resolutions must include the affirmative vote of not less than 66% of our directors then in office and by a resolution of the shareholders including the affirmative vote of not less than 66% of the votes attaching to all shares in issue.

Under Bermuda law, the holders of an aggregate of not less than 20% in par value of the company's issued share capital or any class thereof have the right to apply to the Supreme Court of Bermuda for an annulment of any amendment of the Butterfield Act adopted by shareholders at any general meeting, other than an amendment which alters or reduces a company's share capital as provided in the Companies Act. Where such an application is made, the amendment becomes effective only to the extent that it is confirmed by the Bermuda court. An application for an annulment of an amendment of the Butterfield Act must be made within 21 days after the date on which the resolution altering the Butterfield Act is passed and may be made on behalf of persons entitled to make the application by one or more of their number as they may appoint in writing for the purpose. No application may be made by shareholders voting in favor of the amendment.

Amalgamations and Business Combinations

The amalgamation or merger of a Bermuda company with another company or corporation (other than certain affiliated companies) requires the amalgamation or merger agreement to be approved by the company's board of directors and by its shareholders. Unless the company's bye-laws provide otherwise, the approval of 75% of the shares voting at such meeting is required to approve the amalgamation or merger agreement, and the quorum for such meeting must be two persons holding or representing more than one-third of the issued shares of the company.

The Bank's bye-laws provide that a merger or an amalgamation that has not been approved by the Board must only be approved by not less than two-thirds of all voting rights attached to all issued and outstanding shares.

Under Bermuda law, in the event of an amalgamation or merger of a Bermuda company with another company or corporation, a shareholder of the Bermuda company who did not vote in favor of the amalgamation and who is not satisfied that fair value has been offered for such shareholder's shares may, within one month of notice of the shareholders meeting, apply to the Supreme Court of Bermuda to appraise the fair value of those shares.

Variance from Delaware: In contrast, any two or more corporations existing under the laws of the state of Delaware may merge into a single corporation pursuant to a board resolution and upon the approval by stockholders of each constituent corporation

by a majority of the outstanding shares entitled to vote, except in certain circumstances, where a vote by stockholders is not required.

Shareholder Suits

Class actions and derivative actions are generally not available to shareholders under Bermuda law. The Bermuda courts, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong to the company where the act complained of is alleged to be beyond the corporate power of the company or illegal, or would result in the violation of the company's memorandum of association (or, in our case, the Butterfield Act) or bye-laws. Furthermore, consideration would be given by a Bermuda court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company's shareholders than that which actually approved it.

When the affairs of a company are being conducted in a manner which is oppressive or prejudicial to the interests of some part of the shareholders, one or more shareholders may apply to the Supreme Court of Bermuda, which may make such order as it sees fit, including an order regulating the conduct of the company's affairs in the future or ordering the purchase of the shares of any shareholders by other shareholders or by the company.

Variance from Delaware: In contrast, class actions and derivative actions generally are available to stockholders under Delaware law for, among other things, breach of fiduciary duty, corporate waste and actions not taken in accordance with applicable law. In any derivative suit instituted by a stockholder of the corporation, it shall be averred in the complaint that the plaintiff was a stockholder of the corporation at the time of the transaction of which he complains or that such stockholder's stock thereafter devolved upon such stockholder by operation of law.

Capitalization of Profits and Reserves

Pursuant to the Bank's bye-laws, the Board may: (i) capitalize any part of the amount of the Bank's share premium or other reserve accounts or to the credit of our profit and loss account or otherwise available for distribution by applying such amount in paying up unissued shares to be allotted as fully paid bonus shares pro-rata (except in connection with the conversion of shares from one class to shares of another class) to the shareholders; or (ii) capitalize any amount standing to the credit of a reserve account or amounts otherwise available for dividend or distribution by applying such amounts in paying up in full, partly paid or nil paid shares of those shareholders who would have been entitled to such sums if they were distributed by way of dividend or distribution.

Registrar or Transfer Agent

MUFG Investor Services serves as the Bank's Registrar and Transfer Agent in Bermuda pursuant to an agreement entered into in July 2014. Under the terms of this agreement, MUFG Investor Services is responsible for, among other things, maintaining and updating the Bank's share register, facilitating the payment of dividends and coordinating the convening of shareholders meetings. Computershare Inc. is the Bank's Registrar and Transfer Agent in the US.

Untraced Shareholders

The Bank's bye-laws provide that the Board may forfeit any dividend or other monies payable in respect of any shares of the Bank which remain unclaimed for seven years from the date when such monies became due for payment, provided that at least three dividends have become payable during such seven-year period in respect of the shares in question, after such period the Bank has given notice in accordance with the Bank's bye-laws and provided that the NYSE or BSX has been informed of the intention to forfeit such dividend, as the case may be. In addition, we are entitled to cease sending dividend drafts and checks by post or otherwise to a shareholder if such instruments have been returned undelivered to, or left uncashed by, such shareholder on at least two consecutive occasions or, following one such occasion, reasonable inquiries have failed to establish the shareholder's new address. This entitlement ceases if the shareholder claims a dividend or cashes a dividend check or a draft.

Certain Provisions of Bermuda Law

The Bank is designated as resident in Bermuda for exchange control purposes.

The BMA has given its consent for the issue and free transferability of all of the ordinary shares to and between non-residents of Bermuda for exchange control purposes, provided the Bank's shares remain listed on an appointed stock exchange, which includes NYSE. Approvals or permissions given by the BMA do not constitute a guarantee by the BMA as to our performance or our creditworthiness. Accordingly, in giving such consent or permissions, the BMA shall not be liable for the financial soundness, performance or default of our business or for the correctness of any opinions or statements expressed in the report to which this exhibit is attached. Certain issues and transfers of ordinary shares involving persons deemed resident in Bermuda for exchange control purposes require the specific consent of the BMA.

In accordance with Bermuda law, share certificates are only issued in the names of companies, partnerships or individuals. In the case of a shareholder acting in a special capacity (for example as a trustee), certificates may, at the request of the

shareholder, record the capacity in which the shareholder is acting. Notwithstanding such recording of any special capacity, we are not bound to investigate or see to the execution of any such trust. Pursuant to our bye-laws, the Bank will be entitled to treat the registered holder of any share of the Bank as the absolute owner thereof and accordingly shall not be bound to recognize any equitable claim or other claim to, or interest in, such share on the part of any other person.

Anti-Takeover Effects of Provisions of Applicable Law and the Bank's Bye-laws

Two-thirds supermajority shareholder voting requirement: The Bank's bye-laws provide that, except to the extent that a proposal has received the prior approval of the Board, (i) the removal of a director other than for cause; (ii) the approval of an amalgamation, merger or consolidation with or into any other person, arrangement, reconstruction or sale, lease, conveyance, exchange or other transfer of all or substantially all of the Bank's assets, or in each case, an equivalent transaction; and (iii) the commencement of proceedings seeking winding-up, liquidation or reorganization of the Bank, shall require the affirmative vote of not less than two-thirds of all voting rights attached to all issued and outstanding shares.

Amendments to the Bank's bye-laws: The Bank's bye-laws provide that no bye-law may be rescinded, altered or amended and no new bye-law may be made until the same has been approved by a resolution of the Board and by a resolution of the shareholders. In addition, certain of the Bank's bye-laws, including (without limitation) the bye-law concerning the Super-Majority Actions, may not be rescinded, altered or amended and no new bye-law may be made which would have the effect of rescinding, altering or amending the provisions of such bye-law, until the same has been approved by a resolution of the Board including the affirmative vote of not less than 66% of the directors then in office and by a resolution of the shareholders including the affirmative vote of not less than 66% of the votes attaching to all shares in issue.

Limitation relevant to non-Bermudian shareholders: The Bank's bye-laws provide that any person who is not "Bermudian" as defined in the Companies Act who is "interested" (as defined in the bye-laws) in shares of the Bank which constitute more than 40% of all shares then issued and outstanding is not entitled to vote the shares in excess of this 40% interest at any general meeting of the Bank without prior written approval of the Minister of Finance. For purposes of this provision, "interest" means (1) any interest in shares comprised in property held on trust; (2) any contractual right to purchase shares whether for cash or other consideration; (3) any interest by virtue of any right or obligation (whether subject to conditions or not) to exercise any right conferred by the holding of shares including but not limited to voting rights or any entitlement to control the exercise of any such right; (4) any right to call for delivery of shares; (5) the right to acquire an interest in the shares or an obligation to take an interest in shares; or (6) the power to dispose of shares.

Variance from Delaware: In contrast, Delaware law does not have a similar provision requiring prior approval of a governing body for an interested shareholder to vote in the shares of a Delaware-incorporated company.

Additionally, for purposes of this provision: (1) persons having a joint interest shall each be taken to have that interest; (2) a person shall be taken to be interested in any shares in which an associate (within the meaning of the BDCA) of that person is interested; and (3) a person shall be interested in shares if a body corporate is interested in them and that body corporate or its directors are accustomed to act in accordance with the directions or instructions of that person, or that person is entitled by virtue of any right or obligation (whether subject to conditions or not) to exercise or control the exercise of one-third or more of the voting power at general meetings of that body corporate, and where such body corporate is entitled to control the exercise of any of the voting power at general meetings of another body corporate such voting power shall be taken to be exercisable by that person.

The following interests will not be included in this limitation if the person in question is under any obligation to exercise or control the exercise of the voting rights of the shares at the instance of any other person: (1) any interest of a custodian trustee or a bare trustee; (2) any interest of a licensed bank or other financial institution held by way of security for the purposes of a transaction entered into in the ordinary course of banking business; (3) an interest of a personal representative of any estate; (4) any interest of a person arising by reason only that such person has been appointed a proxy to vote at a specified meeting of shareholders and at any adjournment of that meeting or has been appointed by a body corporate to act as its representative at any meeting of shareholders; (5) any interest of any underwriter or sub-underwriter in any offer of shares provided the agreement or interest is confined to that purpose and any matters incidental to it; (6) any interest of any market maker in the shares which has been approved by the Board provided the interest is confined to that purpose and any matters incidental to it; (7) any interest as a beneficiary under a pension or retirement benefits scheme; or (8) the interests of any subsidiary of the Bank.

In addition, the BDCA prohibits a person from becoming a shareholder controller of any company licensed under the BDCA unless the person provides written notice to the BMA of his intent to do so and the BMA does not object. The definition of shareholder controller is set out in the BDCA but generally refers to a person who, among other things, (i) holds 10% or more of the shares in the licensed institution or another company of which it is a subsidiary company; or (ii) is entitled to exercise, or control the exercise of 10% or more of the voting power at any general meeting of the licensed institution or another company of which it is such a subsidiary.

Limitations on the election of directors: The Bank's bye-laws provide that a person may be proposed for election or appointment as a director at a general meeting either by the Board or by one or more shareholders holding shares of the Bank which in the aggregate carry not less than 5% of the voting rights in respect of the election of directors. In addition, unless a person is proposed for election or appointment as a director by the Board, when a person proposed for appointment or election as a director written notice of the proposal must be given to the Bank, and of his willingness to serve as a director, as follows. Where a director is to be appointed or elected: (1) at an annual general meeting, such notice must be given not less than 90 days nor more than 120 days before the anniversary of the last annual general meeting prior to the giving of the notice or, in the event the annual general meeting is called for a date that is not 30 days before or after such anniversary the notice must be given not later than 10 days following the earlier of the date on which notice of the annual general meeting was posted to shareholders or the date on which public disclosure of the date of the annual general meeting was made; and (2) at a special general meeting, such notice must be given not later than 10 days following the earlier of the date on which notice of the special general meeting was posted to shareholders or the date on which public disclosure of the date of the special general meeting was made.

Exhibit 8

Subsidiaries as of December 31, 2022

Subsidiary	Jurisdiction
Bartley Directors Ltd.	Bermuda
Bermuda Trust Company Limited	Bermuda
BerNom Nominees Limited	Bermuda
Butterfield Asset Management Limited	Bermuda
Butterfield Securities (Bermuda) Limited	Bermuda
Butterfield Trust (Bermuda) Limited	Bermuda
Butterfield Vencap Limited	Bermuda
Compass Services Limited	Bermuda
Day Limited	Bermuda
Field Investments Limited	Bermuda
Field Nominees Limited	Bermuda
Field Real Estate Holdings Limited	Bermuda
Greenview Nominees Ltd.	Bermuda
Grosvenor Trust Company Limited	Bermuda
Harcourt & Co. Ltd.	Bermuda
Lakeside Secretaries Ltd.	Bermuda
Palmar Limited	Bermuda
Skye Nominees Limited	Bermuda
Butterfield Trust (Bahamas) Limited	Bahamas
East Bay Protector Services Inc.	Bahamas
Gresham Nominees Limited	Bahamas
Montague East Ltd.	Bahamas
Sterling East Ltd.	Bahamas
Avalon Corporate Management Limited	Bahamas
Bastion Resources Limited	Bahamas
Pendragon Management Limited	Bahamas
Harbour View Management (BVI) Ltd.	BVI
Miners Management (BVI) Ltd.	BVI
Butterfield Support Services (Halifax) Limited	Canada
Deutsche Transnational Trustee Corporate Inc.	Canada
Butterfield Asset Management General Partner (Cayman) II Limited	Cayman
Butterfield Asset Management General Partner (Cayman) III Limited	Cayman
Butterfield Bank (Cayman) Limited	Cayman
Butterfield Fiduciary Services (Cayman) Limited	Cayman
Butterfield Trust (Cayman) Limited	Cayman
Field Directors (Cayman) Limited	Cayman
Field Nominees (Cayman) Limited	Cayman
Field Secretaries (Cayman) Limited	Cayman
BNTB Nominees (Guernsey) Limited	Guernsey
Butterfield Bank (Guernsey) Limited	Guernsey
Butterfield Trust (Guernsey) Limited	Guernsey
Butterfield Management Services (Guernsey) Limited	Guernsey
Havre Corporate Services Limited	Guernsey
Havre Management Services Limited	Guernsey

Havre (MRL) Limited	Guernsey
Moulinet Trustees Limited	Guernsey
Rose Nominees Limited	Guernsey
Butterfield Custody Services Ltd.	Guernsey
Butterfield Bank (Jersey) Limited	Jersey
Butterfield (Jersey) Nominees Limited	Jersey
Butterfield (Mauritius) Limited	Mauritius
Butterfield Trust (New Zealand) Limited	New Zealand
Butterfield Trust (Asia) Limited	Singapore
Butterfield Holdings (Switzerland) Limited	Switzerland
Butterfield Trust (Switzerland) Limited	Switzerland
Butterfield Group Services Limited	United Kingdom
Butterfield Mortgages Limited	United Kingdom

CERTIFICATIONS

I, Michael Collins, certify that:

1. I have reviewed this annual report on Form 20-F of The Bank of N.T. Butterfield & Son Limited for the year-ended December 31, 2022;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in the Exchange Act Rules 13a-15(f) and 15d to 15(f)) for the company and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting.

5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
- a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: February 22, 2023

/s/ Michael Collins

Name: Michael Collins

Title: Chairman and Chief Executive Officer

CERTIFICATIONS

I, Craig Bridgewater, certify that:

1. I have reviewed this annual report on Form 20-F of The Bank of N.T. Butterfield & Son Limited for the year-ended December 31, 2022;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in the Exchange Act Rules 13a-15(f) and 15d to 15(f)) for the company and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
- a. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
- b. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting.

5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
- a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: February 22, 2023

/s/ Craig Bridgewater

Name: Craig Bridgewater

Title: Group Chief Financial Officer

18 U.S.C. SECTION 1350 CERTIFICATION

I, Michael Collins, Chairman and Chief Executive Officer of The Bank of N.T. Butterfield & Son Limited (the “Company”), and I, Craig Bridgewater, Group Chief Financial Officer of the Company, hereby certify that, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, to my knowledge:

1. The Company’s Annual Report on Form 20-F for the period ended December 31, 2022 (the “Form 20-F”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Form 20-F fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 22, 2023

By: /s/ Michael Collins
Name: Michael Collins
Title: Chairman and Chief Executive Officer

Date: February 22, 2023

By: /s/ Craig Bridgewater
Name: Craig Bridgewater
Title: Group Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Form 20-F or as a separate disclosure document.

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to The Bank of N.T. Butterfield & Son Limited and will be retained by The Bank of N.T. Butterfield & Son Limited and furnished to the Securities and Exchange Commission or its staff upon request.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form F-3 (No. 333-253358) and Form S-8 (No. 333-260683, No. 333-238042, No. 333-214263 and No. 333-213737) of The Bank of N.T. Butterfield & Son Limited of our report dated February 22, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 20-F.

/s/ PricewaterhouseCoopers Ltd.
Hamilton, Bermuda
February 22, 2023